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THIRTY-EIGHTH
ANNUAL REPORT OF THE



BUREAU OF
AMERICAN ETHNOLOGY

TO THE SECRETARY OF THE
SMITHSONIAN INSTITUTION

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1916-1917



WASHINGTON
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1924

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LETTER OF TRANSMITTAL

SMITHSONIAN INSTITUTION,
BUREAU OF AMERICAN ETHNOLOGY,
Washington, D. C., August 4, 1917.

SIR: I have the honor to submit herewith the Thirty-eighth Annual Report of the Bureau of American Ethnology, for the fiscal year ended June 30, 1917.

With appreciation of your aid in the work under my charge, I am

Very respectfully, yours,

F. W. HODGE,
Ethnologist-in-charge.

DR. CHARLES D. WALCOTT,
Secretary of the Smithsonian Institution.

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REPORT OF THE
ETHNOLOGIST-IN-CHARGE

THIRTY-EIGHTH ANNUAL REPORT
OF THE
BUREAU OF AMERICAN ETHNOLOGY

F. W. HODGE, Ethnologist-in-charge

The operations of the Bureau of American Ethnology during the fiscal year ended June 30, 1917, were conducted in accordance with the act of Congress approved July 1 1916, making appropriations for sundry civil expenses of the Government, which act contains the following item:

American ethnology: For continuing ethnological researches among the American Indians and the natives of Hawaii, including the excavation and preservation of archæologic remains, under the direction of the Smithsonian Institution, including necessary employees and the purchase of necessary books and periodicals, \$42,000.

In addition to conducting the administrative affairs of the bureau, Mr. F. W. Hodge, ethnologist-in-charge, assisted by Miss Florence M. Poast, continued the preparation of the annotated bibliography of the Pueblo Indians as opportunity offered, adding about 1,000 cards to the 3,800 previously prepared.

SYSTEMATIC RESEARCHES

In April Mr. Hodge proceeded to New Mexico for the purpose of making final arrangements with the Zuñi Indians for the excavation of the ruins of the large pueblo of Hawikuh, situated on their reservation in the western-central part of the State. This having been accomplished, Mr. Hodge returned to Washington and in the latter part of May again proceeded to Zuñi and established camp at Hawikuh, where excavations were immediately commenced under the joint auspices of the Bureau of American Ethnology and

the Museum of the American Indian, Heye Foundation, of New York City, the latter institution bearing most of the expense of the expedition, and assigning Mr. Alanson Skinner and Mr. E. F. Coffin to aid in the work. Authority for conducting the excavations was courteously granted by the Secretary of the Interior.

The excavation of Hawikuh has as its chief object the study of a Zuñi pueblo known to have been inhabited from prehistoric times well into the historic period, for the purpose of determining, so far as possible, the character and arts of the Zuñi people in early times, as well as the effect of Spanish contact during the sixteenth and seventeenth centuries. Hawikuh was one of the famed "Seven Cities of Cibola" of early Spanish narrative, and its history from the time of its discovery in 1539 until its abandonment in 1670 is quite well known. Consequently the information that the ruins may be expected to yield will in all probability shed considerable light on a phase of the culture of a branch of the Pueblo Indians at an important period in their life.

It is not necessary in this brief report to present the results of the Hawikuh excavations, which were successful beyond anticipation in both a subjective and an objective way. It is expected that a summary report on the work, which was still in progress at the close of the fiscal year, will be presented for publication in the near future.

The beginning of the fiscal year found Dr. J. Walter Fewkes, ethnologist, engaged in an archeological reconnaissance in the vicinity of Gallup, N. Mex. Early in July he proceeded to Mancos, Colo., examining ancient ruins en route and commencing intensive archeological work in the Mesa Verde National Park, where he remained until the close of September. These excavations, conducted with the co-operation of the Department of the Interior, were in continuation of the work initiated several years ago of uncovering and repairing the remains of the more important prehistoric ruins in that great area, thus making them available for study and adding to the park's many attractions.

The scene of Dr. Fewkes's activities during this season was one of a cluster of 16 ruins known as the Mummy Lake

group, situated above Soda Canyon. None of the walls of this large ruin projected above the surface of the mound of fallen building stones and other débris covered with sagebrush, but on excavation the remains were shown to be those of a rectangular pueblo, 100 by 113 feet, with three stories at the north and an annexed court inclosed by a low wall on the south. By reason of its commanding situation, Dr. Fewkes has named this former pueblo Far View House. After clearing the ruin of the great quantity of débris accumulated during centuries, the tops of the walls of the four kivas uncovered were protected with a capping of concrete, and so far as means would permit the walls of other chambers were similarly treated. As a report on Dr. Fewkes's work at Far View House will appear shortly,¹ it is not necessary to present the details here; but it may be mentioned that the most important result of the study of this site is the fact that a new type of Mesa Verde structure has been revealed, the form and character of which shed light on the close relation of pueblos and cliff dwellings. Indeed, Dr. Fewkes reports that Far View House is the only known example of a pure type of pueblo ever completely excavated, the term "pure type" signifying a terraced community building constructed of shaped stones and having circular kivas united with surrounding rectangular rooms. Other significant features are the vaulted roofs of the kivas, the supporting beams of which rest on pilasters, and the presence of a ventilator and a deflector in each kiva, as in the case of certain cliff dwellings. As this pure type of pueblo is entirely prehistoric, it may be regarded as representing a stage in architectural development between the older stage of pueblo structures and the mixed type or modern form in which the arrangement of the rooms and the art of the mason exhibits a retrogression.

On finishing his work at Far View House Dr. Fewkes visited Utah primarily for the purpose of determining the geographic distribution of ruins in the northern limits of Pueblo culture. This reconnoissance extended to the Uintah Res-

¹ "A Mesa Verde Pueblo and its People," Smithsonian Report for 1916, pp. 461-488, pls. 1-15, figs. 1-7, Washington, 1917.

ervation, where hitherto unknown ruins in Hill Canyon, near Ouray, were examined and where a number of stone towers similar to those along San Juan River were found. These ruins, to which Dr. Fewkes's attention was called by Mr. Kneale, agent for the Uncompahgre Ute, are especially striking owing to their unusual situation on eroded rocks of mushroom shape. These towers mark the northernmost limit of Pueblo culture in eastern Utah, and some of them are especially instructive by reason of their relation to prehistoric towers much farther south. An illustrated report on these remains, by Dr. Fewkes, has already appeared.²

Mr. James Mooney, ethnologist, was engaged in field work among the Eastern Cherokee of western North Carolina at the opening of the fiscal year, and on his return to Washington, August 10, resumed the translation and annotation of the Sacred Formulas of the Cherokee, as well as the identification of the plants, etc., used by the tribe in its medicine and other rites. Mr. Mooney reports this work to be well advanced, but its complicated nature, coupled with the author's ill health during the year, has made progress somewhat slow. Mr. Mooney also spent considerable time in supplying information on technical subjects for official correspondence.

Dr. John R. Swanton, ethnologist, was occupied chiefly with two lines of investigation—the one historical, the other philological. In July and August he made a thorough examination of the Woodbury Lowery and Brooks collections of manuscripts in the Library of Congress bearing on the early Spanish history of Florida, finding many important items for incorporation in his "History of the Southeastern Tribes." In September Dr. Swanton visited the Newberry Library in Chicago, where other valuable early documents were found in the Edward E. Ayer collection, which subsequently were copied for the bureau's use by the courtesy of the librarian. These latter manuscripts include a report on the Indians of Louisiana by Bienville, a Louisiana memoir with an extended description of the Choctaw, and a

² "Archeological Investigations in New Mexico, Colorado, and Utah," Smithsonian Misc. Coll., vol. 68, No. 1, pp. 1-38, May, 1917.

memoir by the French captain Berenger, containing, besides historical and ethnological information, vocabularies of the extinct Karankawa and Akokisa tribes. A Spanish census of the Indians of Florida after the period of the English invasions should also be mentioned. For some months after his return Dr. Swanton was engaged in adding to his monograph the historical notes thus obtained, and in copying and translating the more important parts of the manuscripts mentioned, including all of the Berenger memoir.

Although Dr. Swanton's History of the Southeastern Tribes had been completed a year ago, so far as the information was then available, the manuscript discoveries described have enabled him to augment and to improve it substantially, and more recently he has obtained some supplementary notes from the Louisiana Historical Society. The preparation of the maps to accompany the monograph, chiefly from early sources, did not progress as satisfactorily as was hoped, owing largely to pressure of other illustration work, but they are now practically finished.

Dr. Swanton's second paper, also referred to in last year's report, remains as then practically complete so far as the available material is concerned, but it awaits further data respecting the social organization of the Chickasaw and the Choctaw. A third paper, on the religious beliefs and medical practices of the Creeks and their congeners, has been brought to the same stage as the last, namely, with all the available material incorporated and arranged, and the footnotes added.

With a view of furnishing the basis of a general study of the social organization of the tribes north of Mexico, Dr. Swanton spent a few weeks collecting material bearing on Indian economic life, but this has been laid aside temporarily on account of the greater urgency of a closer comparative study of the Indian languages of the southeastern part of the United States, particularly as indications of relationship between some of them have already been noted. As a basis for this work Dr. Swanton has recorded a comparative vocabulary of Creek, Choctaw, Alabama, Hitchiti, Natchez, Tunica, Chitimacha, Atakapa, Tonkawa, Comecrudo, Cotoname, Coahuilteco, and Karankawa. Of these

languages about 500 words were chosen, but as the lexical material from several of the tribes is scanty, the comparison can never be complete. It was the intention to follow the compilation of this table with a closer comparison of Chitimacha and Atakapa, which show many resemblances, but in the course of the work so many more similarities between Chitimacha and Tunica presented themselves that these were selected instead. In partial furtherance of this research Dr. Swanton proceeded to Louisiana in May, where he remained almost until the close of the fiscal year, visiting, studying, and photographing the mixed Indian population along the gulf coast in La Fourche and Terra Bonne Parishes, the Chitimacha at Charenton, and the Koasati northeast of Kinder. From the Koasati about 150 pages of native text with interlinear translation were recorded, and 134 pages previously procured from an Alabama Indian in Texas were corrected.

Mr. J. N. B. Hewitt, ethnologist, at the beginning of March went to Canada for the purpose of continuing his Iroquois studies. Establishing headquarters at Brantford, Ontario, he at once undertook the work of revising the extended texts relating to the Iroquois League, recorded during former field trips. Shortly thereafter this work was interrupted when Mr. Hewitt was selected as an official delegate from the Council of the Six Nations to attend a condolence and installation ceremony at Muncietown, in which he took a leading part, requiring the intoning of an address of comforting in the Onondaga language and also in acting the part of the Seneca chiefs in such a council. This official recognition gave Mr. Hewitt the rare opportunity of observing how such a ceremony is conducted from an esoteric point of view.

On returning to Brantford, March 16, Mr. Hewitt resumed work on the texts pertaining to the league, which necessitated the reading of the words and the immediate context several times to determine their final form. Moreover, it was desirable to read the texts over with every informant separately in order to obtain a full expression of the informant's knowledge or criticism of the work of another. In this

manner it was possible to study about 70 per cent of the texts, and this led, naturally, to the collection of other corrective or amplifying texts and notes. These aggregate 502 pages, comprising 42 topics, recorded from rituals received by Shaman Joshua Buck and Chief Abram Charles. In addition, Mr. Hewitt recorded in English translation three traditions, comprising 45 pages, purporting to relate events and to express ideas alleged to have led to the founding of the League of the Iroquois, showing naively the birth of the idea of human brotherhood and fellowhood in contradistinction to mere local tribalism.

Mr. Hewitt also made important discoveries regarding Iroquois social organization, namely, that certain so-called clans do not exist outside of the names used to designate them. For instance, the "Ball" clan is in reality the Hawk clan; the "Hand" clan of the Cayuga is the Gray Wolf clan, and the "Potato" clan of that tribe is in fact a Duck clan or possibly a Wolf clan. This confusion has been due to popular acceptance of a sobriquet for the real name, hence the doubt in the last instance between the Duck and the Wolf, which it is probable will ultimately be removed. Mr. Hewitt was fortunate also in obtaining a set of wooden masks of the various wind gods, and also two masks of food gods—eight in all. He also procured the gourd rattle used by the late Chief John Buck, a medicine flute, and what was probably the last cradle-board with a beaded belt on the reservation.

On returning from the field early in July, Mr. Hewitt undertook at once the editing and copying of the texts of some of his material relating to the Iroquois League. Among these are the following, chiefly in the Onondaga language: (1) The eulogy of the grandsires and founders, one of the essential chants in the condolence ritual, in the version used by the "father side" of the league; (2) the laws governing federal chiefs in intertribal relations; (3) the laws relating to murder committed by a federal chief; (4) the charge made to a newly installed federal chief; (5) the important tradition of the Bear-foot episode; (6) the address made at the lodge of a deceased federal chief three days after his burial; and (7) the laws relating to the nomination and election of a

candidate for a federal chiefship. Mr. Hewitt also commenced the translation of the extended "father-side" tradition of the founding of the League by the Deganawida and his associates, read the available proofs of Seneca Fiction, Legends, and Myths for the Thirty-second Annual Report, and supplied numerous technical data for use in responses to inquiries by correspondents.

Mr. Francis La Flesche, ethnologist, when not engaged in field work, was occupied in assembling his notes on the Osage Indians, the greater portion of which consists of phonographic records taken from men versed in the tribal rituals, which evidently were composed for the preservation and transmission of the religious concepts of the tribe. Three forms are used in their construction, namely, recitation, song, and dramatic action. The spoken parts, called "wígie," are intoned by the masters of ceremony and by male members of the various gentes of the tribe who have memorized them. These wígie tell of the genesis of the tribe; they recount the stories of the adoption of life symbols and explain their significance, and narrate the finding and selection of the materials used in making the ceremonial paraphernalia. The songs used by the master of ceremonies, with the aid of a few chosen assistants, make the emotional appeal to the various symbols employed in the ritual. Ceremonial acts, processions, and dances accompany some of the songs and wígie.

The theme of these composite rites is the desire of the people for a long, peaceful life and a never-ending line of descendants, and the wígie, songs, and dramatic acts constitute a supplication to the unseen power for aid toward the realization of this desire. The never-ending life so devoutly sought for the tribe seemed to the people to be exemplified in the unfailing recurrence of night and day, in the constancy of the movements of the heavenly bodies, in the manifestation of a like desire among the living forms upon the earth, and this to point to an ever-present unseen animating power to which the people must appeal for the granting of their prayers. In this appeal for never-ending life the Osage

naturally personified, and to a degree deified, those objects to which, as he thought, the unseen power had granted this form of life. Among these he included the vast space within which the heavenly bodies mysteriously moved and into which all living forms are born and exercise their functions. Thus all aspects of nature are made to play a part in the great drama of life as presented in these rituals.

Early in the year Mr. La Flesche finished transcribing the *wígie*, as well as his notes on two complete versions and a portion of a third version of the Child-naming rituals, comprising 107 typewritten pages. On completing this task he undertook the translation of the Osage personal names in current use and of arranging them by *gentes*. The Osage generally cling tenaciously to the ancient custom of ceremonially naming their children in the belief that the ceremonies aid the young in attaining old age. In this work Mr. La Flesche was able to determine that many members of the Osage tribe enrolled as full bloods are in reality of mixed blood. The tabulation of these names by sex and *gentes*, with their translations, together with a transcription of some characteristic tales, occupies 201 typewritten pages.

During the last four months of the fiscal year Mr. La Flesche was engaged in assembling his notes on the Fasting ritual of the *Tsízhu Washtage gens*. Most of the songs are quite different from those belonging to the Fasting rituals of the *Hóngá*, while some of the *wígie* are the same, these being used in common with slight modifications among the different *gentes*. These Fasting rituals cover 139 completed pages, including the music.

A *wígie* was obtained by Mr. La Flesche from an old woman during his visit to the Osage in January, 1917. This *wígie*, which consists of 8 pages, fills a hiatus in the rush-mat ceremony previously recorded.

At the opening of the fiscal year Dr. Truman Michelson, ethnologist, was engaged in continuing his studies among the Sauk and Fox Indians of Iowa, the main work accomplished being the phonetic restoration of a long text, written in the current syllabary, on the origin of the White Buffalo

dance, intended for publication as a bulletin of the bureau. Considerable information pertaining to a number of sacred bundles of the Fox Indians was obtained, as well as various data of a sociological nature. Nearly 300 personal names were recorded, together with the names of the gentes to which their owners belonged; in this manner about nine-tenths of the population of the Fox Indians has been catalogued.

About the middle of August Dr. Michelson proceeded to Oklahoma where, with the cooperation of the Illinois Centennial Commission, he conducted researches among the Peoria. The ethnology of this tribe, properly speaking, has practically vanished, but their language and folklore still persist, though knowledge thereof is confined to only a few individuals. Contrary to ordinary belief, the Peoria language, phonetically, is extremely complicated. From notes left by the late Dr. A. S. Gatschet, it had been inferred that the Peoria belongs fundamentally with the Chippewa or Ojibwa group of central Algonquian languages, and this was fully confirmed. It is quite clear, however, that there has been another and more recent association with the Sauk, Fox, and Kickapoo group, and Peoria folklore and mythology also point to this double association. The system of consanguinity is clearly that of the Sauk, Fox, and Kickapoo group, rather than that of the Ojibwa. Dr. Michelson recorded, mostly in English, an almost exhaustive collection of Peoria folktales and myths.

After devoting about a month's time to the Peoria, Dr. Michelson returned to Iowa and renewed his work among the Sauk and Fox by making a phonetic restoration of a number of texts on minor sacred packs pertaining to the White Buffalo dance, as well as by recording 200 pages of the extremely long myth of the Fox culture hero. Most of the ceremonies in connection with the presentation of a new drum of the so-called religious dance of the Potawatomi of Wisconsin were witnessed, as also were parts of a number of clan feasts.

On returning to Washington in November Dr. Michelson commenced the revision of the English translation of the texts relating to the White Buffalo dance, and devoted atten-

tion also to paragraphing and punctuating the Indian originals for the purpose of making them correspond with the English equivalents. By the close of the year the English translations were typewritten and put in almost final shape, while little work remained to complete the editing of the native texts.

Mr. J. P. Harrington, ethnologist, spent the entire year in continuation of his intensive study of the Chumashan tribes of California, obtaining a large body of important information which at present is in various stages of elaboration and which will comprise about 1,200 typewritten pages. From the beginning of the fiscal year until September 15 Mr. Harrington devoted his attention to the Purisimeño dialect, the existing vocabularies being corrected by the informant, and many new words and grammatical forms added. The next three weeks were spent on the Obispeño with satisfactory results, inasmuch as the material obtained in former years was more than doubled. The sole informant's feeble health made the recording of this material unusually difficult, but it will prove to be of great local as well as of general interest. The remainder of the fiscal year was devoted to Ventureño and Ineseño. While not so nearly lost as Obispeño, it is too late to obtain complete information on these dialects, but in the process of their study many important points have been determined. It is largely from their study that the picture of former Chumashan life must be reconstructed.

The study of the material culture of the Chumashan tribes has not been neglected, and in this work archeological material has been of assistance. Among the important points determined are details concerning the making of the ancient deerskin dress of the women, which consisted of a large back flap and a smaller apron.

From the beginning of the fiscal year to the middle of January, 1917, Dr. Leo J. Frachtenberg, special ethnologist, was engaged in field work in the State of Washington, where he devoted special attention to the Quileute Indians and to collecting additional linguistic and mythological material. The ethnologic investigations covered the subjects of history and distribution, manufacture, houses and households, clothing

and ornaments, subsistence, travel and transportation, warfare, games, and pastimes, social organization and festivals, social customs, religion, medicines, charms and current beliefs, and art, and the recorded results consist of 577 manuscript pages. In addition, Dr. Frachtenberg recorded 156 native songs, including words and translations; he also obtained several hundred native drawings illustrating the material culture of the Quileute, and photographed a like number of ethnologic specimens. Furthermore, he materially added to his linguistic and ethnologic studies of this people, commenced during the preceding year, by collecting several thousand additional grammatical forms and phrases, and by recording 22 new native traditions with interlinear translations, and three stories in English. These texts, in the form of field notes, comprise 176 pages. While engaged in this field work Dr. Frachtenberg was instrumental in inducing Mrs. Martha Washburn of Neah Bay, Mr. and Mrs. Theo. R. Rixon of Clallam Bay, and Mrs. Fannie Taylor of Mora, to give to the National Museum a part of their collections of Makah and Quileute specimens, including two old totem poles, approximately 100 baskets, and more than 30 other ethnologic specimens. In addition to the Quileute studies mentioned, Dr. Frachtenberg collected 88 pages of Makah (Nootka) linguistic data, 57 pages of Quinault (Salish), and 18 pages of Clallam (Lkungen). While in Portland, Oreg., he obtained through the courtesy of the municipal authorities a fine collection of photographs representing several hundred archeological objects owned by the city.

Dr. Frachtenberg returned to Washington early in February. Subsequently, after conference with Dr. Franz Boas, honorary philologist of the bureau, it was arranged that Dr. Frachtenberg prepare for the Handbook of American Indian Languages comparative sketches of the Kalapuya, Molala, Klamath, and Quileute, and possibly one of the Salish languages. He also engaged in the final preparation of his paper *Alsea Texts and Myths*, which is now in process of printing as Bulletin 67. He next proceeded to prepare for publication the results of his earlier investigations of the language, ethnology, and mythology of the Kalapuya

Indians, which will consist of two papers: A Grammatical Sketch of the Kalapuya Languages and Kalapuya Myths and Texts. The Kalapuya grammatical material consists of extended field notes gathered in 1913 and 1914, and of grammatical notes on the Atfalati collected by Dr. Gatschet in 1877. Dr. Gatschet's material, comprising 421 pages of field notes, is of inestimable value; indeed it is to the efforts of this untiring scholar that we owe the preservation of this most important dialect of the Kalapuya language, since he obtained his material, which includes also some valuable ethnologic data, from the last full-blood Atfalati. Dr. Frachtenberg's own material comprises several thousand grammatical forms, phrases, and vocables, and 32 native texts with interlinear translation—630 pages in all. The preparation of these linguistic data, as well as the work on the Kalapuya myths and texts, is well under way. Six of the texts, comprising 36 pages, have been prepared for publication; five of these are provided with interlinear translation and with voluminous notes in which attention is directed to the occurrence of similar myths among other tribes. During his studies of the Kalapuya languages Dr. Frachtenberg discovered that there is sufficient reason to believe that the Kalapuya, Takelman, and Chinookan languages are genetically related, the determination being based not only on lexical but also on structural and morphological material. This discovery tends to establish a connecting link between some of the languages of California and most of the languages spoken in Oregon.

During the last two weeks of the fiscal year Dr. Frachtenberg was temporarily detailed for special work in the Bureau of Investigation of the Department of Justice.

SPECIAL RESEARCHES

Dr. Franz Boas, honorary philologist, completed the preparation of his manuscript on the ethnology of the Kwakiutl Indians, about 2,700 pages of which was submitted to the bureau and assigned as the accompanying paper of the Thirty-fifth Annual Report, the composition of which was commenced before the close of the fiscal year. At the same

time progress was made on the preparatory work for the second part of the memoir. Under Dr. Boas's direction Miss Mildred Downs listed the incidents of the Kwakiutl mythology preparatory to a discussion of the subject, and necessary additional information for this purpose was obtained from Mr. George Hunt, of Fort Rupert, Vancouver Island. Mr. Hunt submitted in all 460 pages of manuscript in response to questions, and sent botanical specimens that have been identified through the kindness of Dr. N. L. Britton, director of the New York Botanical Garden.

The manuscript for Bulletin 59, Kutenai Tales, has been completed. All the texts having been set up during the preceding year, the abstracts and comparative notes, referring to the pages of the bulletin, were written out (32 pages of printed matter), and a vocabulary (140 pages of manuscript) based on the text was prepared.

For the second part of the Handbook of American Indian Languages, Dr. Frachtenberg submitted his sketch of the Alsea grammar, which will be prepared for publication as soon as a sufficient number of texts are available. Considerable progress has been made in the preparation of the Kutenai grammar. Owing to the impossibility of communicating with Mr. Bogoras in Russia, no progress has been made in proof reading the Chukchee grammar, which has been in type for more than three years, but which can not be completed without submitting the proofs to the author. During the year, however, Dr. Boas revised the Eskimo texts by Mr. Bogoras, for which a brief ethnological introduction has been written by Dr. Ernest Hawkes.

The results of the extended field work of Mr. James Teit, made possible through the generosity of Mr. Homer E. Sargent of Chicago, are nearing completion. At the present time two manuscripts are well advanced. One of these, consisting of about 1,000 pages, prepared jointly by Dr. Boas and Dr. H. K. Haeberlin, was submitted in May, accompanied with a number of maps showing the distribution of Salishan dialects at various periods. It consists of a discussion of the characteristics of the various dialectic groups, comparative vocabularies on which the deductions are based,

and a few simple texts. The material on which these studies are founded was collected from field expeditions by Dr. Boas between 1886 and 1900, and by additional material gathered by Mr. Teit between the latter date and the present year.

Dr. Haeberlin has also undertaken to discuss the Salishan basketry, for which purpose he has made detailed studies of various collections in the United States and Canada. In connection with this and other necessary researches on the Salishan tribes, Dr. Haeberlin visited British Columbia and Washington in 1915, and again in June, 1917, for the purpose of obtaining additional material. These expeditions were also made possible by the generosity of Mr. Sargent.

In his investigations Dr. Boas has had the valued help of Miss H. A. Andrews and Miss Mildred Downs.

In behalf of the bureau, Mr. W. H. Holmes, of the National Museum, visited New York, Boston, and Cambridge, for the purpose of studying archeological material in the museums of those cities in connection with the completion of Bulletin 60, Handbook of American Antiquities, part 1 of which is in type. The proof reading of this publication was well in hand at the close of the fiscal year.

The study of Indian music, undertaken by Miss Frances Densmore several years ago under the auspices of the bureau, was successfully continued through the year. The proof reading of Bulletin 61, Teton Sioux Music, was brought to completion. A second season of field work was devoted to the Ute Indians, sufficient data being obtained to complete a work on the music of that tribe. Of this material 73 new songs were transcribed and analyzed, 23 songs previously recorded were likewise analyzed, and 5 songs also previously submitted with analyses were further studied. Five group analyses, together with about 30 pages of manuscript description, were prepared. All except about 15 Ute records are now ready for publication; these cover a considerable variety of songs, analyses of which show important differences from songs of other tribes, one peculiarity being an added importance of rhythm.

For purposes of comparison, Miss Densmore undertook on her own account a study of primitive Slovak music, 10

songs of which were analyzed by the method employed in connection with Indian songs, and these were found to contain interesting points of difference.

Through the courtesy of Dr. Dayton C. Miller, of the Case School of Applied Science in Cleveland, Miss Densmore procured graphic evidence of peculiarities of drum and voice combination noted by ear in Indian music. Dr. Miller made two photographs, about 30 feet in length, each representing about 15 seconds' duration of sound. It is the intention to utilize part of these as illustrations in the forthcoming bulletin on Ute music, the songs photographed being Ute dance songs with strong rhythmic peculiarities.

Early in June Miss Densmore proceeded to the White Earth Reservation, Minnesota, for the purpose of conducting a study of the material culture of the Chippewa Indians, and at the close of the year good progress was reported.

Mr. D. I. Bushnell, jr., continued the preparation of the manuscript for the Handbook of Aboriginal Remains East of the Mississippi, about 50,000 words being added to the material previously furnished, not including a portion that was rewritten as a result of a discovery of new and valuable information pertaining to certain localities. Introductions to the archeology of various States remain to be written, but it is believed that both the manuscript and the illustrations for the entire bulletin will be completed before the close of the fiscal year 1918.

Under the joint auspices of the bureau and the National Museum Dr. A. Hrdlička visited in October, 1916, a site at Vero, Fla., at which were found certain human remains reputed to be of great antiquity. As a summary account of Dr. Hrdlička's observations has already appeared in Smithsonian Miscellaneous Collections (vol. 66, no. 17, pp. 24-29, 1917) and an extended report will be published in Bulletin 66 of the bureau, now in press, it need only be mentioned that a thorough inquiry has resulted decisively against the assumption of great antiquity of the remains. The pottery and the bone and stone objects found in association with the human burials are identical with similar artifacts of the Florida and other southeastern Indians,

while the bones themselves without exception exhibit modern features, with numerous characteristics that permit their identification as purely Indian.

Owing to the fact that Dr. A. L. Kroeber, of the University of California, found it expedient to elaborate certain portions of his handbook of the Indians of California, it was not practicable to submit the entire manuscript before the close of the fiscal year, but at this writing there is every prospect that the work will be ready for publication within a short time.

MANUSCRIPTS

The following manuscripts, exclusive of those submitted for publication, were received by the bureau:

Photostat copy of a San Blas vocabulary, recorded by Ensign J. M. Creighton, United States Navy, transmitted to the Smithsonian Institution by the Secretary of the Navy.

Philippine songs presented by Mr. E. H. Hammond, of Albuquerque, N. Mex.

Photograph of a picture writing on elk skin by Washakie, the Shoshoni chief, with a key thereto.

Reports on prehistoric ruins in Arizona, with numerous photographs, prepared by the late S. J. Holsinger, of the General Land Office, and deposited in the bureau by the United States Forest Service.

Abnaki hymns from John Tahamont, of Pierreville, Quebec, presented by George G. Heye, Esq.

PUBLICATIONS

The editing of the publications of the bureau was continued through the year by Mr. J. G. Gurley, assisted as occasion required by Mrs. Frances S. Nichols. The status of the publications is presented in the following summary:

PUBLICATIONS ISSUED

Thirty-first Annual Report. Accompanying paper: Tsimshian Mythology (Boas).

Coos, An Illustrative Sketch, separate (Frachtenberg), Bulletin 40, part 2 (Boas).

Bulletin 55, Ethnobotany of the Tewa Indians (Robbins, Harrington, Freire-Marreco).

List of Publications of the Bureau.

PUBLICATIONS IN PRESS OR IN PREPARATION

Thirty-second Annual Report. Accompanying paper: Seneca Fiction, Legends, and Myths (Hewitt and Curtin).

Thirty-third Annual Report. Accompanying papers: (1) Uses of Plants by the Indians of the Nebraska Region (Gilmore); (2) Preliminary Account of the Antiquities of the Region between the Mancos and La Plata Rivers in Southwestern Colorado (Morris); (3) Designs on Prehistoric Hopi Pottery (Fewkes); (4) The Hawaiian Romance of Laie-i-ka-wai (Beckwith).

Thirty-fourth Annual Report. Accompanying paper: An Introductory Study of the Arts, Crafts, and Customs of the Guiana Indians (Roth).

Thirty-fifth Annual Report. Accompanying paper: Ethnology of the Kwakiutl Indians (Hunt, edited by Boas).

Bulletin 59, Kutenai Tales (Boas).

Bulletin 60, Handbook of Aboriginal American Antiquities. Part 1, Introductory: The Lithic Industries (Holmes).

Bulletin 61, Teton Sioux Music (Densmore).

Bulletin 63, Analytical and Critical Bibliography of the Tribes of Tierra del Fuego and Adjacent Territory (Cooper).

Bulletin 64, The Maya Indians of Southern Yucatan and Northern British Honduras (Gann).

Bulletin 65, Archeological Explorations in Northeastern Arizona (Kidder and Guernsey).

Bulletin 66, Recent Discoveries of Remains Attributed to Early Man in America (Hrdlička).

Bulletin 67, Alsea Texts and Myths (Frachtenberg).

The distribution of publications has been continued under the immediate charge of Miss Helen Munroe and at times by Mr. E. L. Springer, of the Smithsonian Institution, assisted during the first part of the year by Miss Lana V. Schelski, and latterly by Miss Ora A. Sowersby, stenographer and typewriter. Notwithstanding conditions incident to the war and the consequent necessity of withholding the transmission of various foreign shipments, publications were distributed as follows:

	Copies
Annual reports and separates	5, 954
Bulletins and separates	5, 804
Contributions to North American Ethnology and separates	28
Introductions	7
Miscellaneous publications	191
Total	11, 984

ILLUSTRATIONS

Mr. DeLancey Gill, with the assistance of Mr. Albert E. Sweeney, continued the preparation of the illustrations required for the publications of the bureau and devoted the usual attention to photographing visiting Indians. The results of this work may be summarized as follows:

Photographic prints for distribution and office use	578
Negatives of ethnologic and archeologic subjects	173
Negative films developed from field exposures	214
Photostat prints from books and manuscripts	950
Drawings made	54
Mounts used	62
Portrait negatives of visiting Indians (Creek 9, Arapaho 4, Cheyenne 16)	29
Negatives retouched	75
Illustration proofs examined at Government Printing Office ..	9, 000
Illustrations submitted for reproduction and engraver's proofs edited	781

LIBRARY

The reference library of the bureau continued in the immediate care of Miss Ella Leary, librarian, assisted by Mr. Charles B. Newman. During the year 435 books were accessioned, of which 97 were purchased, 286 acquired by gift or exchange, and 52 by the entry of newly bound volumes of periodicals previously received. In addition the bureau acquired 388 pamphlets. The aggregate number of books in the library at the close of the year was 21,750; of pamphlets, about 13,848. In addition there are many volumes of unbound periodicals. Several new periodicals were added to the exchange list and about 50 defective series were either wholly or partly completed. As might be expected, the publication of various European periodicals devoted to anthropology has either been suspended or has ceased entirely. Largely with the assistance of Mrs. Frances S. Nichols many of the older books and pamphlets were newly catalogued by both subject and author, and thus made more readily available. Of 133 volumes sent to the bindery about half were returned before the close of the year. Books borrowed from the Library of Congress numbered about 400.

COLLECTIONS

The following collections were acquired by the bureau, by members of its staff, or by those detailed in connection with its researches, and have been transferred to the National Museum:

Six ethnologic objects from British Guiana, presented by Dr. Walter E. Roth, of Marlborough, Pomeroon River, British Guiana. (60049.)

A small collection of archeological objects of earthenware, jadeite, etc., from the Kiché district of Totonicopan, Guatemala. (61097.)

A collection of archeological objects, including human bones, gathered by Mr. Neil M. Judd in Utah. (60194.)

Seven specimens found by Mr. Joseph Dame in Millard County, Utah, and purchased from him through Mr. Neil M. Judd. (60105.)

A collection of archeological objects and skeletal material gathered by Dr. Walter Hough at the Luna pit village in western New Mexico. (60196.)

Ten baskets of the Guiana Indians of South America, presented to the bureau by Dr. Walter E. Roth, of Marlborough, Pomeroon River, British Guiana. (60452.)

Seventeen prehistoric pottery vessels, one piece of matting, and a few small objects collected by F. W. Hodge in a cist in a cave in a southern wall of Cibollita Valley, Valencia County, N. Mex. (60453.)

Twenty-five archeological specimens gathered by Dr. J. Walter Fewkes from ancient ruins near Gallup, N. Mex. (60502.)

A small black-ware vase from Santa Clara pueblo, New Mexico, presented by Robert H. Chapman, of Washington, D. C. (60826.)

Twelve stone artifacts from Reeves Mill, near Pitman, Gloucester County, N. J., presented by Mrs. M. B. C. Shuman. (60836.)

Archeological material collected by Dr. J. Walter Fewkes from excavations conducted at Mummy Lake Ruins, Mesa Verde National Park, Colo. (60880.)

Archeological material collected by Dr. J. Walter Fewkes from excavations conducted at Oak Tree House, Mesa Verde National Park, Colo. (60901.)

An Assiniboin headdress from Alberta, Canada, presented by Mr. Robert H. Chapman, Washington, D. C. (61007.)

Skulls, skeletons, and parts of skeletons, an Indian ornament embedded in stone, and pottery fragments, collected in the vicinity of Vero and Fort Myers, Fla., by Dr. A. Hrdlička. (61291.)

Seven baskets made by the Koasati Indians of Louisiana, collected by Dr. John R. Swanton. (61315.)

PROPERTY

Furniture was purchased to the amount of \$196.25; the cost of typewriting machines was \$206, and of a camera \$10.50, making a total of \$412.75 expended for furniture and apparatus. On the whole the furniture of the bureau is in good condition, but there are a few unserviceable pieces that should be replaced, while need of a few filing cases for current notes and manuscripts is felt.

MISCELLANEOUS

Quarters.—One of the rooms on the third floor of the north tower of the Smithsonian building, occupied by the bureau, was painted, and the electric lighting of three rooms improved.

Personnel.—The only change in the personnel of the bureau was the appointment of Miss Ora A. Sowersby, stenographer and typewriter, on February 14, 1917, to succeed Miss Lana V. Schelski, transferred. A temporary laborer was employed from time to time when required.

Clerical.—The correspondence and other clerical work of the office, including the copying of manuscripts, has been conducted with the aid of Miss Florence M. Poast, clerk to the ethnologist in charge; Miss May S. Clark, and Mrs. Frances S. Nichols. Miss Sowersby was assigned to the division of publications of the Smithsonian Institution for duty in connection with correspondence arising from the distribution of the bureau's publications.

Respectfully submitted.

F. W. HODGE,
Ethnologist-in-Charge.

DR. CHARLES D. WALCOTT,
Secretary of the Smithsonian Institution.

ACCOMPANYING PAPER

AN INTRODUCTORY STUDY OF THE ARTS,
CRAFTS, AND CUSTOMS OF THE
GUIANA INDIANS

BY

WALTER EDMUND ROTH

PREFACE

The ethnographical area which I have attempted to review in the following pages comprises that portion of the South American Continent bounded, roughly speaking, by the Atlantic seaboard, the Orinoco, and the northern limits of the watershed of the Rio Negro, and the lower Amazon; it also includes in a measure the Antilles, an early home of the Carib and the Arawak.

In a former work, published in the Thirtieth Annual Report of the Bureau of American Ethnology, I dealt with the animism and folklore of the Indians; in the present one I discuss their arts, crafts, and customs.

The European war has prevented me from carrying out my original intention of examining the earlier and best of the Guiana collections displayed in certain of the continental museums, for, as is unfortunately the case with the majority of our British possessions, one has to visit foreign countries in order to complete the ethnographical study of our autochthonous populations. In this connection a glance at the nationality of the authors in the following bibliography is sufficient commentary.

I spent the major portion of the year 1914 visiting the hinterland borders of our own colony from the upper Rupununi to the Ireng and to Mount Roraima. There is still a vast amount of field work to be undertaken, not only there, but in Surinam and Cayenne, and if haste be not made, the information which it is now possible to glean will probably be lost forever. The so-called opening up of the country for the trader, the rancher, the timber getter, the balata and the rubber bleeder, *et hoc genus omne*, may or may not exert a beneficial influence on the welfare of the Creole, the Negro, and the European; but for the aboriginal Indian it means ruin, degradation, and disappearance.

I commenced this work in the early part of 1907.

WALTER E. ROTH.

MARLBOROUGH, POMEROON RIVER,
BRITISH GUIANA, JUNE, 1916.

In the interval consequent on the postponement of publication due to the World War, I have made two further journeys in the interior—a second trip to the Rupununi, and a tour along the upper reaches of the Barima and Barama. Many additions have been made to the original text.

W. E. R.

CHRISTIANBURG, DEMERARA RIVER,
BRITISH GUIANA, JANUARY, 1921.

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During the course of my investigations in the interior I received a great deal of assistance from Messrs. H. P. C. Melville and John Ogilvie, well-known cattle ranchers who have spent a large portion of their lives there. The original and very valuable information obtained from them is indicated in the text by the initials (MEL) and (JO) respectively.

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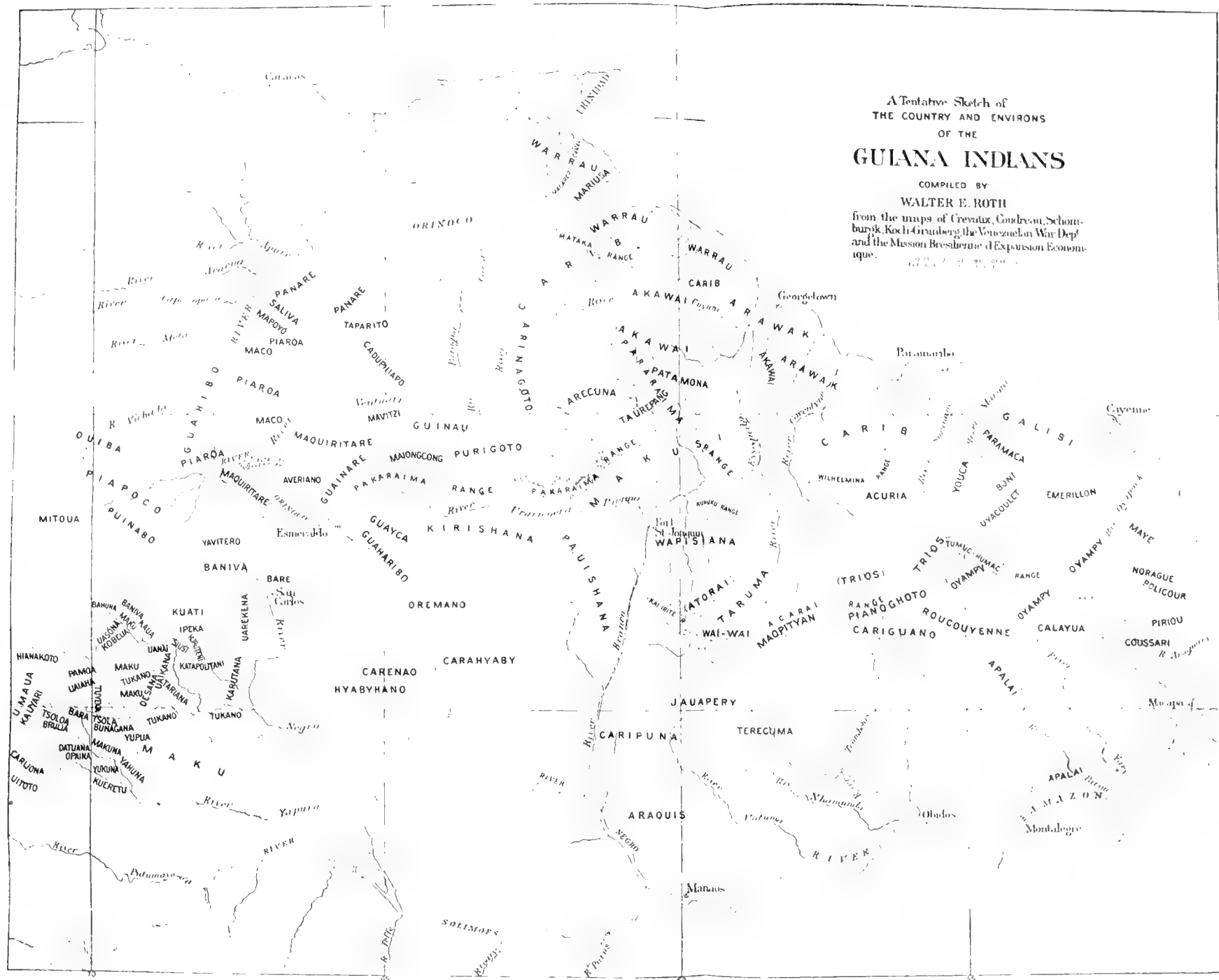
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COMPILED BY
WALTER E. ROTH

from the maps of Crévieux, Condreou, Schomburgk, Koch-Girumburg, the Venezuelan War Dept and the Mission Bresilienne d'Expansion Economique.



CHAPTER I

FIRE, STONE, TIMBER, AND PRIMITIVE TOOLS

Fire: Obtained by rubbing and twirling (1); by flint and steel (2); carried from place to place (3); an aid to timber work (4); an illuminant (5).

Stone celts and axes (6): Types of pattern (7); fixation in handles (8)· manufacture (9).

Tortoise-shell axes (10).

Engraved celts (11).

Stone adzes and chisels (12).

Knives: Stone (13); wood (14); fish-tooth (15).

Scrapers: Stone (16); shell (17); tooth (18).

Drills and drilling (19, 20); sandpaper (21).

Modifications with introduction of iron (22).

1. The island Carib practiced the art of making fire by friction between two pieces of maho (*hibiscus*), but judging from Rochefort's



FIG. 1.—Fire obtained by twirling. (After Barrère.)

comparison with what took place on the Amazon (RO, 494-495) it is clear that the method used was rubbing, not twirling. The latter (fig. 1) was evidently characteristic of the mainland, as in Cayenne (PBA, 178), on the Corentyn (StC, I, 319), among the Makusi (SR, II, 96-97), etc. The first English account of obtaining fire by twirling is given by St. Clair from the Arawak of the Corentyn, who used the heri-heri (yarri-yarri). In one of two pieces of stick belonging to it they cut a small notch, in which was inserted the end

of the other stick, held perpendicularly, the friction caused by twirling the latter round and round with the palms of their hands for a few minutes producing fire. They then light the maroon, which is a peculiar species of moss collected by the ants in great quantities from the leaves of the behersda tree as material for their nests. The Indians rob them of this moss, which serves the purpose of tinder (StC, I, 319). Like the Island Carib, the Indians of Cayenne made an especial use of maho; but they manufactured their fire sticks also from the wood of cacao and ruku (PBA, 178). The Makusi employed the timber of the *Apeiba glabra* Aubl., with tinder from the debris collected by ants from some *Melastomaceæ* (SR, II, 96-97). The Arawak of the Pomeroon made their apparatus from the fruit pedicel of the truli (fig. 2) or of the kokerit, but as the twirler under such circumstances was too short for manipulating, it was firmly tied to a long pencil. Warrau used *Gualtheria uregon* Aubl. (IT, 257).

On the Moruca they manufactured both constituents from the

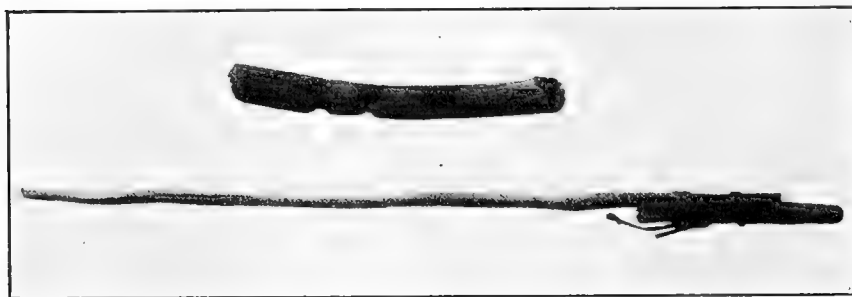
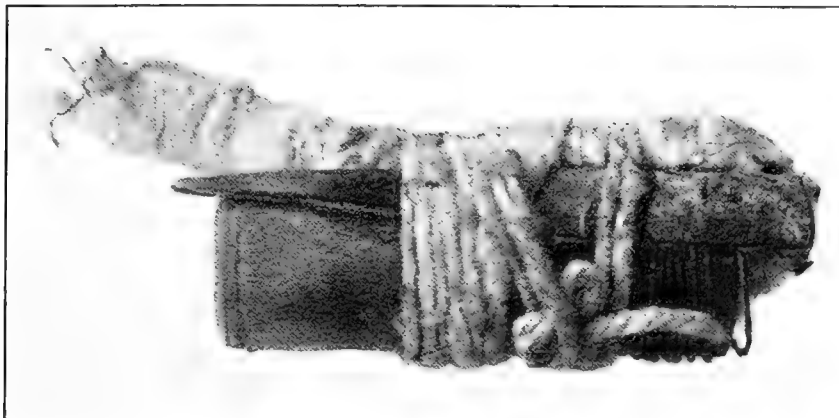


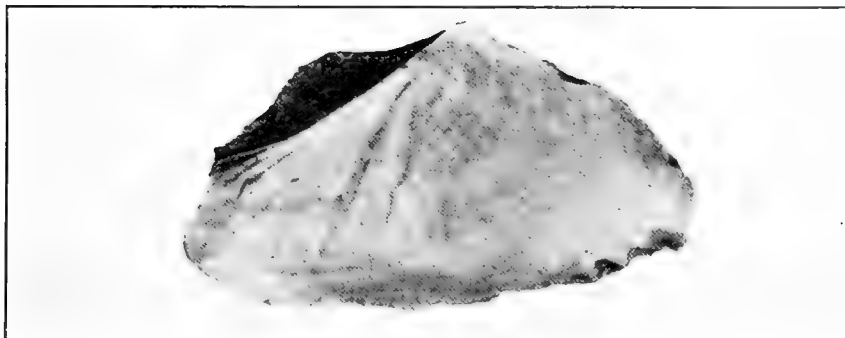
FIG. 2.—Fire sticks from pedicel of fruit of truli palm.

timber of a tree known to them as buri, which I have not been able to identify. The Arawak medicine men alone made them out of a certain vine. In all three cases the tinder was a pad of raw cotton. Another timber put to the same use by the Carib of the Barama and Waini, and also by the Warrau, was the trysil or koroballi (*Pentaclethra*).

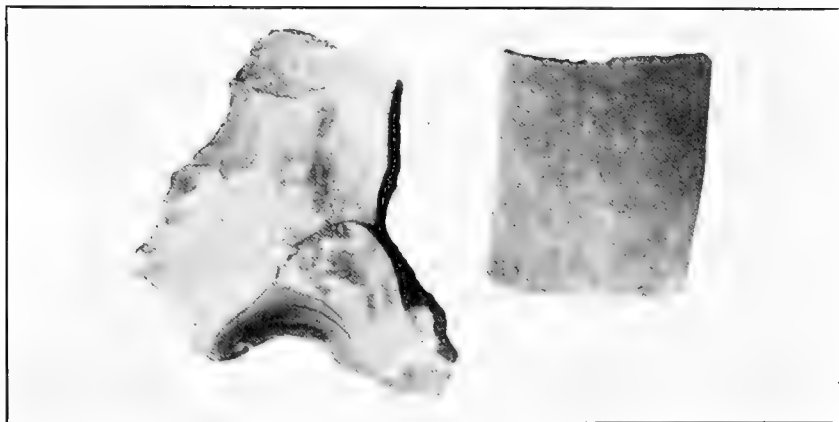
2. When, as on a hunting expedition, it becomes necessary to strike fire anew, and no matches are available, still other means than those just outlined remain at the Indians' disposal; for example, either with flint and steel, or rather with jasper and an old knife (pl. 2 B, C), in conjunction with a bit of raw cotton. Specimens are still to be seen of a tinder box made of bamboo containing cotton and an attached piece of iron file (pl. 2 A). Old Arawak from the Essequibo have assured me that they can remember the time when their people used to catch fire with two "stones" and cotton (WER, VI, sec. 122), but though it is reasonably certain such a practice must have preceded the flint and steel stage, I have met with no reference to it throughout



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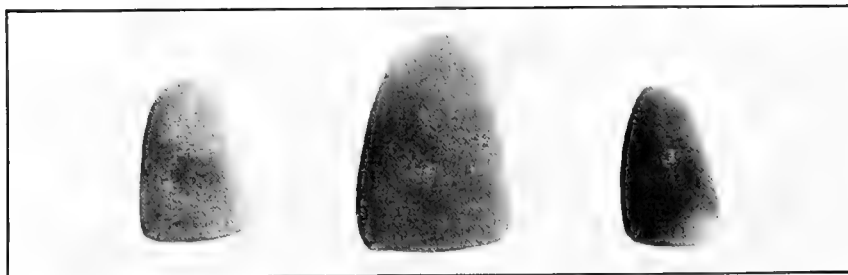
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PRIMITIVE METHODS OF MAKING FIRE

A, Tinder box with cotton and iron file. Makusi. *B*, *C*, Firestones and old iron blade. (Georgetown Museum.)

*I**J**K**B**A**C**D**E**F**G**H*

CELTS

A, B, Elongated and curved celts, a cutting edge at each extremity. Sandhills, Demerara River.
C-E, Small-sized celts, butt trimmed and rounded, cutting edge inclined to be straight. Demerara and Essequibo Rivers. *F-H*, Larger, more rounded and heavier celts, truncated butt, and a rounded cutting edge. Corentyn River. *I-K*, Celts with attenuated pointed butts, cutting edge straight or rounded. Potaro River. (Georgetown Museum.)

the literature. I have seen several specimens of the "fire stones." Red and green jasper stones, on account of their extra hardness, are eagerly sought by the Arekuna at Roraima, and traded as far as the coast (App, I, 281). The Akawai brought with them from Roraima pieces of jasper which are in great request lower down on the Mazaruni and on the coast for striking fire (App, II, 167). Schomburgk also speaks of flint-stones for catching fire (Sr, II, 252).

3. It has been pointed out that among the natives fire has seldom to be lighted afresh, for it is kept constantly burning in every house, and even on long canoe journeys a large piece of smoldering timber is usually carried (on an earthen hearth). Even when walking across the savanna an Indian sometimes carries a firebrand (IT, 327). On the Rio Tiquie at the present time the Bará carry with them from stream to stream a box made from a segment of bamboo-reed, with a hole drilled through its base, to allow the air to fan the glowing tinder within, a substance obtained from a certain ant's nest. In this way they are provided with the means of lighting a new fire without much trouble (KG, I, 337).

4. To fell a tree the Carib Islanders were obliged to set fire to its base, surrounding it above with moistened moss to prevent the fire ascending; thus they undermined the tree little by little (RO, 508). On the mainland, in Cayenne, the larger trees were also felled by the application of fire to their trunks (PBA, 152). On the Orinoco, even in Gumilla's day, many of the Indians manufactured their weapons, drums, and canoes by the aid of fire and water only, at a cost of much time and patience. By the action of fire, from time to time blowing on the cinders, they destroy and remove as much as is not required, and by means of water, which is kept always at hand, they quench the fire so as not to waste more wood than is necessary. So slow is this labor that its advance can be compared with the rate at which plants grow (G, II, 99). Again Gumilla speaks of the Indians' spades or shovels for digging in the field as being formed of a very hard timber; these also are shaped by burning some parts and leaving others free, not without skill and symmetry, at an expenditure of much time (G, II, 229).

5. Fire, once caught, could be applied for illuminating purposes through the agency of beeswax, certain gums, and even of the timber itself. Thus torches, or rather wax candles, made of cotton threads drawn through melted beeswax until the requisite size was obtained, were found among the Carib of the Upper Pomeroon (SR, II, 420) and as I have occasionally observed, the Akawai of the Barima (SR, I, 206), and Makusi on the Essequibo (ScG, 230). Bancroft had previously drawn attention to this application of beeswax after purification by melting, steaming, and boiling; from this, he says,

the Indians make all their candles by dipping long wicks of cotton into it and then rolling them into balls (BA, 231). Humboldt describes certain torches on the Rio Tomo, Orinoco, as tubes made of bark, 3 inches in diameter, filled with copal resin (AVH, II, 294). I have met with similar ones of smaller dimensions among the Pomeroon Akawai. In many parts, the Indians, instead of oil, light themselves with the copal, bound round with the leaves of the banana tree; others, for the same end, make use of certain seeds, put within the hollow of a pointed rod which, being run into the earth, serves at the same time as a candlestick (LCo, 39). In a Makusi camp at the Warraputa Falls, Essequibo, Schomburgk saw haiowa gum in use as a substitute for candles. This not only gave a good light but perfumed the air with its incense-like odor (ScG, 230). On the other hand, though the Essequibo Indians burned rubber (*hevea*) as candles, which furnished a brilliant light, the scent at the time of burning was not very agreeable (StC, II, 104).

6. The islanders at the time of the conquest used stone celts. Thus writes Chanca: None of the natives of these islands [Guadeloupe, Porto Rico, Santo Domingo] we have visited, possess any iron. They have, however, many implements, also hatchets and axes, all made of stone, which are so handsome and well finished that it is a wonder how they can contrive to make them without employing iron. (DAC, 455.)

So, on the mainland, celts were used up to comparatively recent periods. On the Orinoco with their hatchets made of a stone with a cutting edge at each end, inserted midway in suitable handles (*hachas de pedernal de dos bocas, o de dos cortes, encaxandolas por el medio en garrotes proporcionados*) the Indians would cut the green stems of the brambles and briars (*maleza*). It took them two months to cut down a tree (G, II, 229). I obtained such a celt (pl. 3 A, B) from the Moruca Warrau through their captain, who told me that it came "from Orinoc side." In Cayenne Barrère speaks of similar difficulties experienced by certain of the Indians out of touch with Europeans, in clearing their fields, who know of felling large trees only by means of fire applied to their trunks, a procedure not only laborious but requiring much time. Others employ small hatchets, made of pieces of a very hard black stone, 4 or 5 inches long, to which they give the shape of our axes by rubbing them on sandstone. The handles consist of a piece of very hard wood wherein they cut a socket (*fente*) to hold the base of the stone with Pitte (*Kuraua*) thread and Many (*Karrimanni*) resin, which they soften, so that it takes the place of a godroon (PBA, 152). The mention of the use of the thread suggests that the double narrow-grooved stone ax is referred to, as otherwise it is hard to see for what purpose it could be

applied (sec. 8). Certain celts were very probably intended for wedges.

7. As to the types of celt and ax found in the Guianas, there are certain more or less distinct groups to one or the other of which I believe all specimens may be assigned. These groups can be recognized as follows, but it is only proper to admit at the outset that the distinctive peculiarities of some may become imperceptibly merged into those of others (except perhaps in the first series), there being no hard and fast line of demarcation. In all probability the type largely depended upon the shape in which the water-worn pebble was originally found (sec. 9).

i. The first group is distinguished from all the others by the presence of a cutting edge at each extremity (pl. 3 A, B), of which one may be larger than the other. The celt is elongate and curved, but there is no notch or groove for the attachment of a handle as mentioned by Gumilla (sec. 6). Personally, I am inclined to think that it may also have been held by the middle in the hand (sec. 8).

ii. The second group (pl. 3 C, D, E) includes those comparatively small specimens with the butt more or less trimmed in the smaller ones for insertion into the socket of a haft, as with certain of the clubs (sec. 153). The cutting edge is approximately straight.

iii. Larger specimens with truncated butts (pl. 3 F, G, H) and rounded cutting edges comprise a third group, the members of which are further characterized by being comparatively squat and heavy. I see no reason why these celts may not have been used without handles.

iv. Narrow flattened celts with markedly pointed butts (pl. 3 I, J, K) are distinctive of this class. They may be described as nearly petaloid in form and as showing but very rarely (I believe in only two specimens in the Georgetown Museum) any indication of a groove. The cutting edge is straight or rounded. These celts may have been hafted into oval-slit boards (sec. 8).

v. The so-called grooved axes, each provided with a notch or groove above and below, which may be either very sharp and narrow or correspondingly blunt and open, all intermediate stages being noticeable (pl. 4). In the former extreme the butt is more or less squat and squared; in the latter it is markedly convex, occasionally almost attenuated (IT, pl. x, fig. 4), but its edge, straight or convex, remains blunt. The blade, with no sign of a groove across it, is generally rounded, but in some specimens takes the shape of a European hatchet. The method of fixation of celts belonging to this fifth type is a matter that is still in doubt (sec. 8).

8. In the very rare specimens still extant of celts fixed in rectangular-section wooden handles (sec. 153), the stone is secured by fitting its base into an opening cut to receive it with exactness, and by the

aid of resin (fig. 3, *a*); the fixation is independent of the use of thread and the celt is without grooves. Barrère's description above quoted (sec. 6) would therefore evidently refer to the sharp and narrow-grooved axes (sec. 7, *v*), in which, as I believe it may be reasonably supposed, the method of fixation adopted was somewhat after the style sketched in the illustration (fig. 3, *c*), the object of the grooves being solely to secure the kuraua twine in position. The nature of the wooden handle to which the more blunt and open-grooved ax was attached is hard to understand, unless it partook of the Australian type (fig. 3, *d*)—a withe bent double and fixed with gum cement and twine; but this is pure conjecture. At the same time it is possible that an ax of this extreme type may have been fixed in the

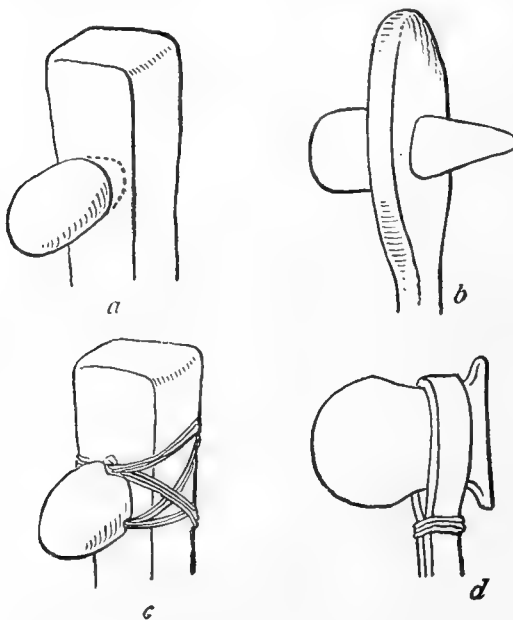


FIG. 3.—Hafting of the celt. Mainly conjectural.

same way as the stone and copper T-shaped Peruvian ones. So, also, the wooden handle fixed midway on the stone celts with cutting edges at both ends (pl. 3 A, B) is difficult to understand; were it in the form of a board with an oval slit (fig. 3, *b*) as in certain North American forms, the grip on the celt would certainly be tightened when the larger end was used, but correspondingly loosened when the smaller extremity was worked. Of course such an oval-slit board would answer the purpose admirably with that form of celt (pl. 3 I,

J, K) in which the contour gradually tapers from the cutting edge to more or less of a point. The whole subject of fixation, however, requires much further investigation, for we may be sure that some of these celts have been used as adzes and for similar purposes without handles. It is also possible that Gumilla may have been mistaken about his double-edged axes (sec. 6), which it seems to me could have been worked far more profitably and expeditiously by hand. Again, it is quite feasible that certain of the highly specialized forms, for example, those with a double open groove, may have been used for dance or decorative purposes, and even if secured at all may have been fixed in a manner quite unknown to us.

9. It is clear that celts were manufactured by at least two methods—grinding down various fragments broken from rocks, and grinding down water-worn pebbles already possessing more or less the contour and size required. To make their celts the Indians told Gumilla that they used to break the desired fragments by the use of other stones, and then grind them on very smooth rocks with the help of water to give them the necessary shape and edge, but he never witnessed their manufacture (G, II, 229). Evidence of this grinding process in the smooth artificial furrows or grooves met with on the rocks at the waterside, either along the seaport or at river rapids, is very abundant throughout the Guianas from Cayenne (Cr, 7, 16, 143, 152, 172) to the Orinoco.¹ I know of only one celt specimen in the rough, that is, in the stage after breaking and chipping and before grinding; it seems extraordinary that more such fragments should not have been found. The celt in question came from the Potaro River, was forwarded to the Smithsonian Institution, and reported upon by Mr. William H. Holmes as follows: "The implement-like specimen forwarded by Dr. Roth is of impure gray limestone, roughly shaped by chipping, the shape being that of a thick ovoid blade, having the broad and narrow ends characteristic of the celt fairly well developed. In type, it resembles somewhat certain of the well-known 'paleolithic' implements of Europe. A portion of the original surface appears on the flatter side, but traces of wear by use, if there were such, have been obliterated by weathering. The chip or fracture facets are, however, clearly discernible, the latter margins having been somewhat rounded by frequent blows. Specimens very similar are common in workshop sites in the United States where celts are roughed out preparatory to completion by pecking and grinding."

10. On the Amazon, when first visited by the Spaniards, were tribes who made axes of stones, which they ground to an edge with main strength. These axes were much stronger than those of tortoise shell and would cut down any great tree which the natives desired to fell, with less fear of breaking them and with much more speed (AC, 91). The art of manufacture of such tortoise-shell axes and hatchets has come down to us. The Indians cut the hardest part of the tortoise shell, which is that under the belly, into "leaves" of about a hand's breadth, and not quite so thick as one's hand. After having dried a "leaf" in smoke they whet it upon a stone; then, fastening it into a wooden helve, they make use of this tool to cut everything they fancy as well as if it were the best ax that can be fashioned but with a little more pains. They make their hatchets of the same material and the handles they put on them is a pegebuey's (manati's) jaw bone, which nature seems to have purposely fitted

¹ For a proper appreciation of the subject the reader is advised to consult my work on the present-day manufacture of stone implements in Northeastern Australia, in *North Queensland Ethnography*, Bulletin No. 5 (Domestic Implements, etc.) Brisbane, 1904.

for their use. With these instruments they finish all their work, not only canoes, but tables, cupboards, seats, and other household goods, as completely as if they had the best joiners' tools that are in use among us (AC, 90). There are references to such tortoise-shell axes in the folklore of the present-day Guiana Indians (*e. g.*, WER, VI, sec. 22).

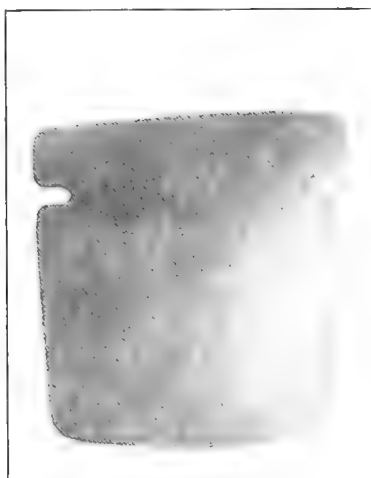
11. In the Georgetown Museum are three engraved celts that came from around the Demerara River (pl. 5 A, B). Except for size—one is 353 mm. long and the smallest somewhat more than 200—they are practically identical. Below the head, with its mouth and ears bearing a resemblance to an acouri, though its likeness to that of a four-eyed fish has been suggested, are two pecked grooves, the anterior covering half the nape of the neck, the posterior completely encircling it. Below these rings is the median convex dorsal ridge leading to the rounded adze-like extremity of the implement. The ventral surface of the body, which is concave, shows no ridging.

12. Besides the possibility of having been employed as wedging, cutting, or scraping implements, many of the celts already noted may have been used both as axes and adzes by the simple device of shifting the handle fixation from a vertical to a horizontal plane. I have both observed and recorded (*op. cit.*) this manner of arrangement, according to the purpose for which the celt is required, from among the North Queensland savages. In the Georgetown Museum is a beautiful green stone specimen of what seems to be either a specialized type of double-edge chisel (pl. 5 C, D), though I admit ignorance of any such analogous implement elsewhere, or more probably a sort of sculptor's tool for smoothing, modeling, or stamping the designs on the effigy vessels and pot figurines (*e. g.*, pls. 31 A; 32 A). As a matter of fact, up to the present time, Indians use a pebble stone for such purposes in pottery manufacture (sec. 91).

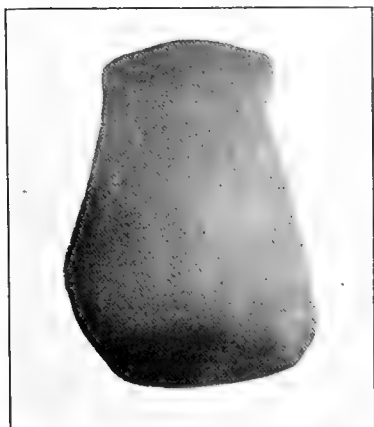
13. Celts were employed also as knives and scrapers, the cutting edge, though irregular and discontinuous, being obtained by flaking, from both sides, the section of the margin where it had been broken away from its original matrix. No particular care seems to have been taken to secure any special contour or to grind away irregularities. Such stone knives have been seen in use by the Waiwai as late as 1906; the specimens, which were 5 to 6 inches long, were employed in cutting up cassava root (JO). I am told that an exactly similar specimen was found among the heaps of fragments strewn around the quarry, a small outcrop of rock about 6 miles southeast of Dadanawa on the upper Rupununi. Two other stone knives which I found, weatherworn, in the neighborhood of the same stream, show a further development in that they have been given a distinctly rounded contour by skillful and careful chipping (pl. 6 G). Again, in a shell mound between the upper Pomeroon and the head of



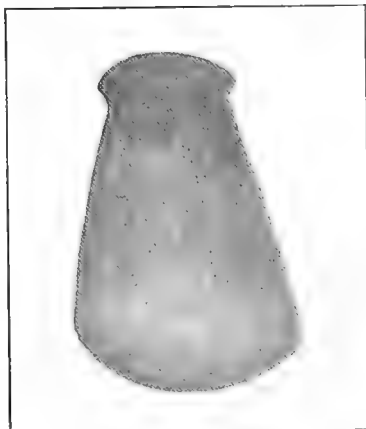
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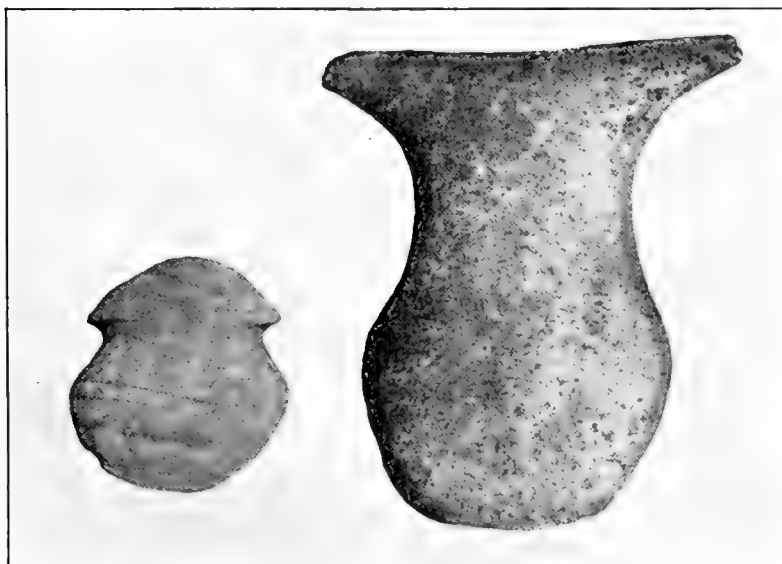
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C



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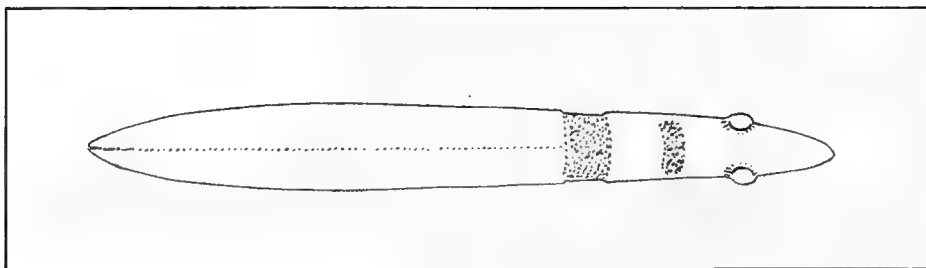
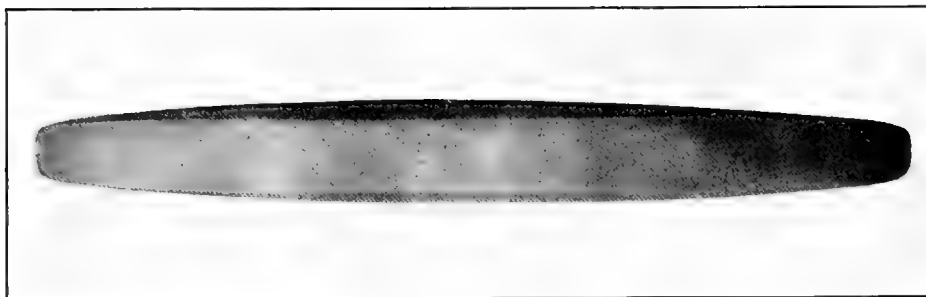
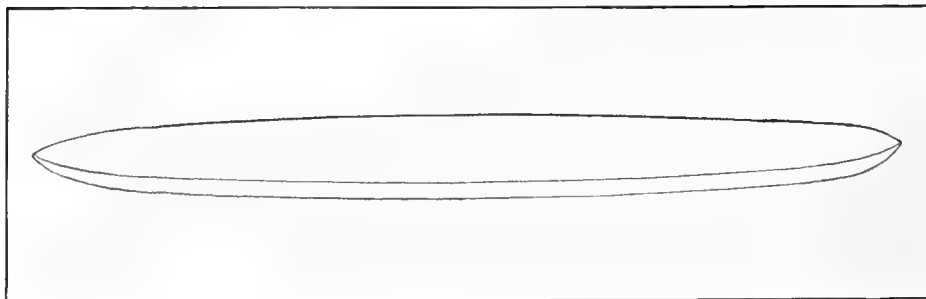


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F

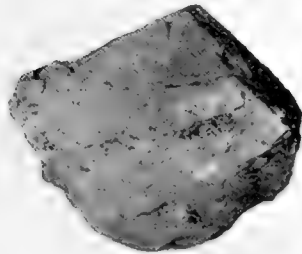
GROOVED AXES

A, B, South Canuku Mountains. *C, D*, South Canuku Mountains and Rupununi River.
E, F, East coast Demerara and Barima Rivers, respectively. (Georgetown Museum.)

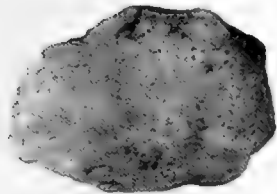
*A**B**C**D*

ENGRAVED CELTS

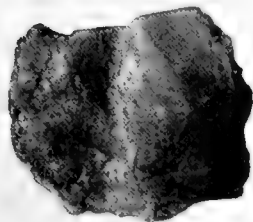
A, B, Engraved celts, from Sandhills, Demerara River. *C, D*, Greenstone specimen, of problematical use, possibly a chisel or sculptor's tool. (Georgetown Museum.)



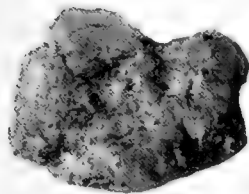
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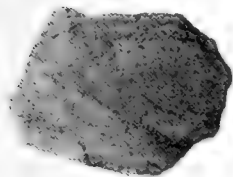
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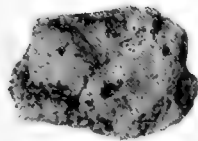
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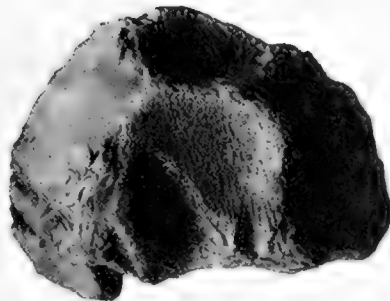
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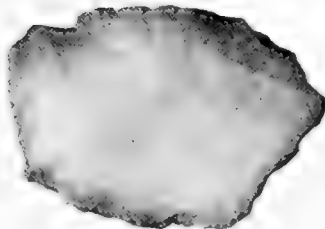
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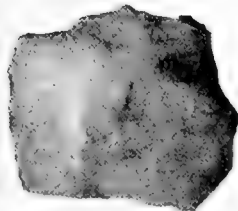
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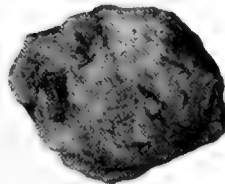
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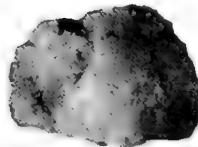
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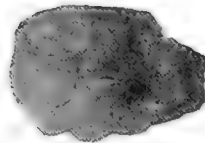
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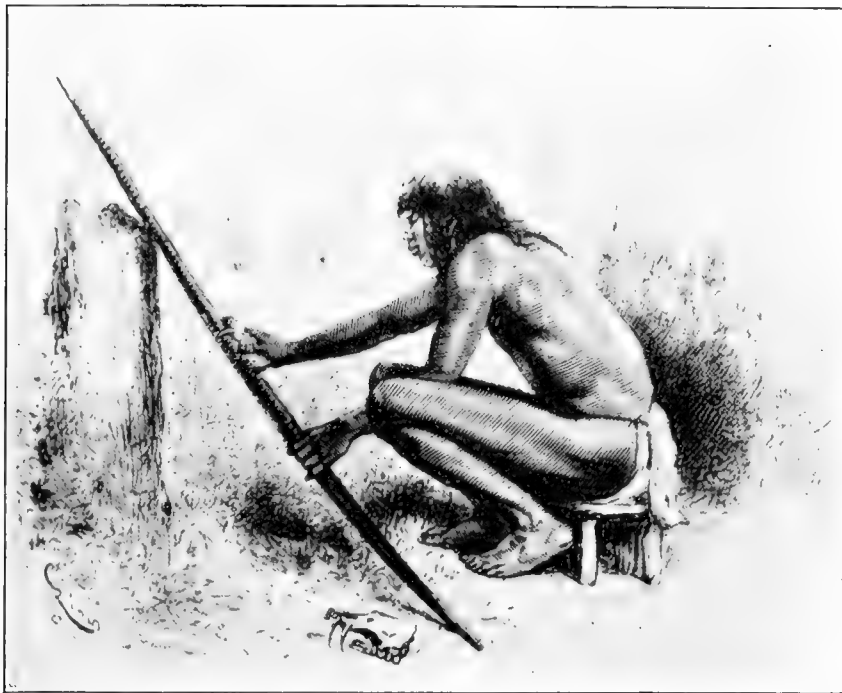
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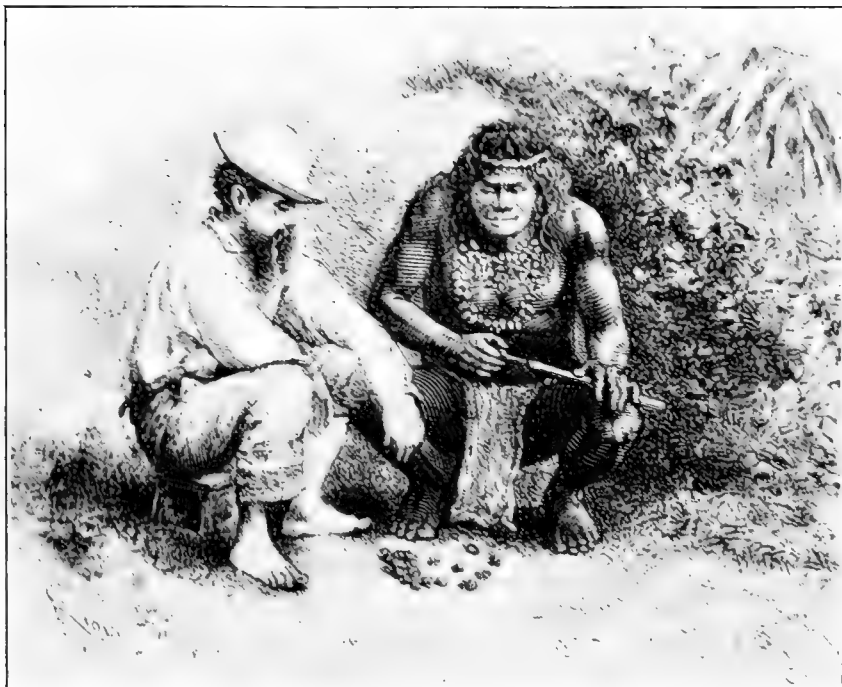
L

STONE KNIVES AND SCRAPERS

Knives: Stone (A), quartz (E, F, L); scrapers (A, D, H, K).



A, Use of scraper made of bush hog's lower jaw. (After Crévaux.)



B, Drill, rolled on the thigh. (After Crévaux.)

USE OF SCRAPER AND DRILL

Akawinni Creek, superficially examined by me in 1911, were found several small fragments of quartz (*e. g.*, pl. 6 E, F, L), with chipped edges, seemingly used as knives for hacking away the flesh from human bones, the masses of which reasonably precluded any other purpose than the one suggested; furthermore, such quartz is not found in the immediate neighborhood, and must have been purposely brought from a distance. Similar finds have been recorded from other mounds (sec. 773).

14. Knives were made of materials other than stone. The reed knife was found in Brazil, Guiana, and the southeastern part of North America (GF, 423-438), but the accounts of it from the Guianas are rare. An old bush negro captain in Surinam told de Goeje that some 50 years previously the Trio used very sharp knives made of bamboo (GO, 5). With the Makusi of our own colony the navel string of a male child was severed with a sharply cut bamboo; that of a female with a piece of arrow reed (SR, II, 313).²

15. On the Orinoco Gumilla speaks of the teeth of the pirai fish being so sharp that the Quirruña, and others who dispense with their hair, employ them instead of scissors, for cutting it, by fixing the jaws in place and tying the ends together with twine (G, II, 209). A similar practice would seem to have obtained elsewhere in the Guianas; the teeth were certainly commonly used as scrapers for sharpening the poisoned darts for the blowpipe. A fish-tooth knife was employed also in the Chaco and throughout Brazil (GF, 423-438).

16. In the working of a fragment of rock into a celt many flakes would be obtained which on occasion could serve as scrapers. Or a scraper could be made as required on the wayside—I have picked up dozens of them while wandering along the pathways over the Pakaraima ranges. These pieces (pl. 6 A-D, H-K) are interesting as indicating the practice of the stone-chipping art in a new locality.

17. Other scrapers can be made from snail shell and similar hard materials. Even by the aid of fire and water alone, states Gumilla (G, II, 100), after having removed sufficient from a stick to give it the shape of a spear, club, or arrow, a task no less wearisome and troublesome presents itself. The Orinoco Indians seek or already possess a quantity of snails of an extra large size that thrive in areas subject to inundation, the shells of which they break up, thus securing chips having a cutting edge like a glass jug when broken. It is by means of these chips, combined with time and perseverance, that they give the finishing touches and gloss to their bows and incredible fineness to their spears and arrows (G, II, 99). The shell scrapers, etc., from Barbados, of which many fakes have been put on the market for the tourist traffic, were made from the central spire or the spreading undulating lip of the Queen conch (Ti., vol. v, 1918, p. 54).

² In the Gran Chaco wooden knives are still used for scaling and cutting up fish and in eating water-melons (NOR, 60-61).

18. Yet other scrapers have been recorded. Crévaux describes an interesting primitive form made of a bush hog's lower jaw (pl. 7 A) from which the ascending rami have been removed, the canine teeth shaving away the timber as desired. He saw the tool employed by Emerillons in the manufacture of bows (Cr, 168). The Taruma and Waiwai use bush hogs' teeth fitted into the ends of a wooden handle, decorated with feathers, for a similar purpose (JO). The palate bones of certain fish, and the teeth of certain others, as the *pirai*, can also be used as scrapers, for example, in sharpening the poisoned darts used with the blowgun. Father Acuña, speaking of the Amazon Indians, has mentioned that their chisels, planes, and wimbles were made of wild hogs' teeth and of the horns of other animals, which they inserted into wooden handles (AC, 91).

19. There is a record of the Carib Islanders piercing the shell bugles for their necklaces, but seemingly, no mention is made of the details (PBR, 233). So also the necklets, armlets, etc., of the Caberre and of many Carib women on the Orinoco, made of beads from snail shells, must have been perforated, but there is no account of how the work was done (G, I, 125). At the present day in the Uaupes River district the drilling of seed, fruit shells, teeth, etc., for necklace and other ornaments is effected by means of a bone drill. This is made of a pointed fragment of monkey (*Lagothrix*) bone fixed with kuraua thread and cement into a pencil handle which is twirled with both hands. When not available this drill may be replaced by a bone or iron-pointed arrow (KG, I, 124). Again, in the making of the slot running along the arrow head, into which the barb will be subsequently fastened, some five or six holes are carefully drilled in close apposition by twirling between both hands (like the fire stick) an artificially pointed monkey-bone splinter held vertically; the substance remaining between the holes is subsequently picked and broken away, and the slot is thus gradually formed (sec. 129). But instead of using both hands the shaft may be held horizontally and rolled along the thigh with only one hand (pl. 7 B). Crévaux has thus described the making of the seed necklaces (sec. 535) of the Roucouyenne, Trio, etc. They employ for the purpose the capsule of a seed (*Omphalea diandra*), the envelope of which the Indian breaks with his teeth. Then seizing a chip in his left hand he pierces it with a drill rolled briskly on the right thigh. This drill is made of an *aymara* (*Hoplias* sp.) or *sakané* tooth fixed in the extremity of a small stick. The negroes at Kourou and Iracoubo make similar but finer seed necklaces, employing for the purpose a wimble put in motion by means of a bow (Cr, 285). A bow drill, however, is certainly indigenous to the Guianas; or rather, the principle upon which it works is no novelty to the Indians, for the Wapishana and neighboring

tribes apply it in the manufacture of the three-yarn cotton scale lines of their hammocks (sec. 38).

20. Wallace was the first to draw attention to the cylindrical quartz chest ornaments (sec. 537) from the Uaupes River Indians. These stones are 4 to 8 inches long and about an inch in diameter. They are ground round and flat, at the ends—a work of great labor—and each is pierced with a hole at one end, through which a string is passed so as to suspend it around the neck. It seems almost incredible that they should be able to make this hole in so hard a substance without iron instruments. They are said to use the pointed flexible leaf shoot of the large wild plantain, triturating with fine sand and water. . . . It is said to be a labor of years; yet it must take a much longer time to pierce that which the Tushaua wears as the symbol of his authority, for it is generally of the largest size, and is worn transversely across the breast, for which purpose the hole is bored lengthwise from one end to the other, an operation which . . . sometimes occupies two lives (ARW, 191). Another traveler has recently seen these ornaments again in the same district, and identifies the pointed wooden needle employed as made from the *Iriartea exorrhiza* palm (KG, I, 326). Quartz and other stone beads (sec. 76), likewise drilled, have been recorded.

21. The rough and scabrous leaves of the *Curatella americana* Linn. were employed as our tradesmen would use sandpaper for polishing purposes (ScT, 20). The leaves of the trumpet wood (*Cecropia peltata*) were similarly employed (Da, 159). The dried tongue of the warapaima fish (*Sudis gigas*) is applied to the same use. The perforated seed capsule chips for the necklaces of the Roucouyenne, etc., are threaded and polished by hand with the débris from pottery pounded up and moistened (Cr, 285). The polish on any of the hardwood timbers is completed by means of repeated rubbing with the hands and crabwood oil.

22. With the introduction of iron, however, modifications took place in certain of the preceding processes. Thus, Schomburgk describes how he had often seen the Makusi and others take a piece of old iron, a discarded cutlass, for instance, make notches in it, and then use it as a saw, occupying a whole day, perhaps, in cutting an inch deep into some of their hard timbers (SR, I, 424). Wooden hooks (sec. 191) have been replaced by metal ones. In the utmost confines of the area under consideration the latest of European and American axes are in common use. Notwithstanding the fact that iron griddles were introduced upward of two centuries ago (sec. 363), clay griddles (sec. 362) are still used.

CHAPTER II

GUMS, WAX, OILS, PIGMENTS

Gums, resins, balsams, etc.: *Hymenæa courbaril*, *Protium*, *Humiria floribunda*, *Vismia guianensis*, *Copaifera officinalis*, *Eperua*, *Mimusops globosa*, *Tabebuia longipes*, *Moronobea coccinea*, *Bisi*, *Sapium*, *Hevea* (23).

Beeswax (24).

Oils and unguents:

(A) Vegetable—*Carapa guianensis*, *Astrocaryum*, *Attalea*, *Maximiliana regia*, *Mespilodaphne*, *Oenocarpus bacaba*, *Lecythis zabucajo*, *Eugenia catinga*, *Myristica sebifera*, *veserri* and *cunama*, *cunuri* and *uacu* (25).

(B) Animal—Turtle-egg (26); *Steatornis caripensis* (27).

Pigments, red, purplish, and blue: *Bignonia chica*, *Bixa orellana*, *Bellucia aubletii*, *Coussapoa latifolia*, *Genipa americana*, *Henriettea succosa*, *Homalium* sp., *Maparakuni erythroxylum*, *Pterocarpus guianensis*, *Renealmia exaltata*, *buruburuli*, *wiliko* (28); red clay (29).

Pigments, black and brown: *Inga laterifolia*, *allakoidde* (30).

Pigments, yellow: *Lukunanijio* (31).

Pigments, white: *Kaolin* (32).

23. Gums, resins, and balsams are largely used by the Indians, and obtained chiefly from the following plants:

Hymenæa courbaril Linn., the simiri or locust tree, the algarroba of the Spaniards (G, I, 269; AVH, II, 309), gum anime, copal, etc. Lumps of gum, 2 or 3 pounds in weight, fall from their trunks, as clear as crystal (G, I, 269). The Indians cut the trunk with a knife, and from each wound there flows a quantity of resin as white as snow and of a very sweet smell. If kept a long time it develops a yellow color (G, I, 267). Sometimes it is dug out of the ground. Thus at 5 or 6 inches' depth, between the roots of the *Hymenæa courbaril*, masses of the resin anime (erroneously called copal) are discovered, and are sometimes mistaken for amber in inland places (AVH, II, 359). Kappler apparently challenges this statement of Humboldt's by speaking of this species of *Hymenæa* as the copal tree (AK, 54). Again, Fermin talks of gum copal being obtained from incisions in a very large tree, which they [in Surinam] call loms or courbaril (FE, 83). The Indians employ it for lighting purposes. A length of it stuck up in the ground burns away if lighted on top (G, I, 269). Among the Maypure of the Orinoco it is used for covering over the paintwork on the pottery (AVH, II, 309). It is very good for curing the megrim (G, I, 267). The Indians chew it for pains in the stomach and flatulence, and often, by way of suffumigation, for rheums, headaches, etc.

Protium heptophyllum (= *Icica heptophylla*, = *Amyris ambrosiaca*), the haiowa of the Arawak, the shipu or sibu of the Warrau, the sipipio of the Carib, the incense tree, from which the fragrant resin of conima

is obtained (ScD, 98). The rough masses of this deliciously scented white resin, . . . which is very inflammable, are often collected and stored by the Indians for lighting fires. Sometimes it is broken up into small pieces, which are put into hollow sticks [or rolled in leaves] and used as torches [or tapers, ScO, 54]. Made pliable by the admixture of a little oil, it is formed into balls . . . and in this state is stored and used to scent oil for anointing the bodies and hair of Indians (IT, 315-316).

Protium (Icica) guianense March is mentioned by Crévaux in Cayenne: The Maroon negroes of Guiana call the incense *moni* (money) doubtless because it serves them to buy from the whites that which they may require (Cr, 304).

Protium aracouchili (= *Icica acouchini* = *Amyris heterophylla*), from which is derived the balsam of acouchi. I take this to be identical with the arrecocerra and racaciri balsams mentioned by Bancroft and Fermin, respectively. This [arrecocerra] is the grand Indian vulnerary for wounds, etc., which it speedily digests or incarns (BA, 87). It is also used for sticking on feathers (BA, 275). Balsam racaciri is derived from a tree on the banks of the Amazon. They let it trickle into a calabash from incisions made in the tree; a sovereign remedy for all recent sores and even old wounds, applying it in the form of a plaster put on as hot as possible (FE, 83).

Protium (Icica, Amyris) carana.—The greatest part [of the resinous substances] employed in the trade from the village of Javita on the upper Orinoco with Angostura [Bolívar] comes from the mararo or caragna, which is an *Amyris* . . . It yields a resin strongly odoriferous and white as snow . . . It becomes yellow where it adheres to the internal part of the old bark (AVH, II, 357). This extract from Humboldt very probably affords a clew to the identification of certain resins mentioned by Gumilla—the mara and caraña. Mara is a rare resin, but it is not yet known whence the Guayba, Tunebo, and Chiricoa Indians obtain it. It is used for hunting deer, which are said to be attracted by its perfume . . . Caraña is a resin which the Indians extract, of a reddish color, but I am ignorant of its uses or effects (G, I, 269). The word is met with again in Surinam, where Fermin believes the “gomme de janipabas” to be identical with the caranna or, in French, caregne (FE, 250). Schomburgk speaks of the substance as being something like gum elemi (SR, II, 337).

Humiria floribunda Juss.—Known as the bastard bullet tree. It would seem to be identical with what the French in Cayenne call the “bois rouge” and the Indians coumery. Even at a distance the tree gives a strong and agreeable perfume (PBA, 21). Perhaps the same may be said, in the way of identity, of the cunasiri of the Orinoco: A tree of large size, color of the timber reddish; sawdust filings from it give the odor of incense (G, I, 267). From the humiria is derived the umiri balsam (SR, II, 337).

Vismia guianensis Pers. and its derived gum, guttae, is mentioned by Schomburgk (SR, II, 337).

Copaifera officinalis Linn.—It is from this tree that the balsam copaiba is derived. On the Orinoco the balsam passed under various names, *e. g.*, cabima, so called by the Indians after the tree which produced it, and by corrupting the word the Spaniards came to speak of it as oil of canime; other Indians [Carib] called it curucay, while certain of the whites described the tree as "palo de aceite," and the balsam as oil of maria (G, I, 275–276), or as the oil of palma christi (FE, 45). In the catalogue of British Guiana contributions to the London International Exhibition of 1862 mention is made of a specimen of gum or resin from the curaki or kurakai tree. At the present time, in the Pomeroon district, the Arawak term for it is purukai. While Stedman calls it mawna (ST, I, 384, 403), Richard Schomburgk gives mararen as the vernacular for the tree (SR, II, 472), and his brother Otto calls it maran (ScO, 96), which is the Creole term for the balsam. Bancroft speaks of it as mauna (BA, 45). It was chiefly owing to the importance of the trade in this commodity that friendly relations came to be established between the Dutch and the Carib (G, I, 277). To prepare it, the Indians [on the upper Rupununi] cut a semicircular hole near the bottom of the trunk to the heart of the tree. At certain seasons of the year, chiefly in February and March, the balsam flows abundantly and fills the hole in the course of a day, when, next morning, it is put in calabashes, and forms an article of barter (ScG, 251). According to Gumilla it would appear that on the Orinoco the Indians began to tap the trees in August (G, I, 275–276). The Carib Indians mix this gum with arnotta to paint their bodies, says W. C. McClintock (CC, 15). Schomburgk's men eagerly anointed their bodies and hair with it (ScG, 251).

Eperua spp. (*E. falcata*, *E. jenmani*, *E. schomburgkii*).—Wallaba tree. From this is derived a very sticky gum resin. Its styptic and curative powers in cuts and bruises are well appreciated by the Indians and other natives of our colony (CC, 15).

Mimusops globosa Gaertn.—Bullet or balata tree. Its whitish resin is employed for attaching the different parts of an arrow (Cr, 234), the chip stones in a cassava grater (GO, 5), etc. The Wapishana and Makusi, who call it turara, obtain it in barter from the Taruma Indians.

Tabebuia longipes.—White cedar. Contains little cavities full of aromatic gum (G, I, 267). Without any incision it is deposited on the bark or even falls to the foot of the tree (Cou, 170).

Moronobea coccinea Aubl. (= *Symphonia bacculifera* = *Symphonia coccinea*).—This is the manni of the Arawak, Carib, etc., the ohori of the Warrau, the manil in Cayenne, the breo of the Portuguese (Cr,

234). The gum derived from this tree is known as colliman (HR, 382), karamanni (Arawak), abiyeweri (Warrau), peraman (?Spanish), or "buck" wax (CC, 15). When incisions are made in the tree trunk it exudes a gum of a yellowish color. It is mixed with beeswax and finely powdered charcoal. While still semiliquid it is generally run into a hollow bamboo, but is sometimes allowed to take shape and to harden in the bottom of a buck pot (IT, 315). It is employed by the Indians for fastening the points of their arrows, waxing their thread and fishing lines, and calking their canoes, for preserving their nets and cordage, and for the same purposes as pitch. Said to have been

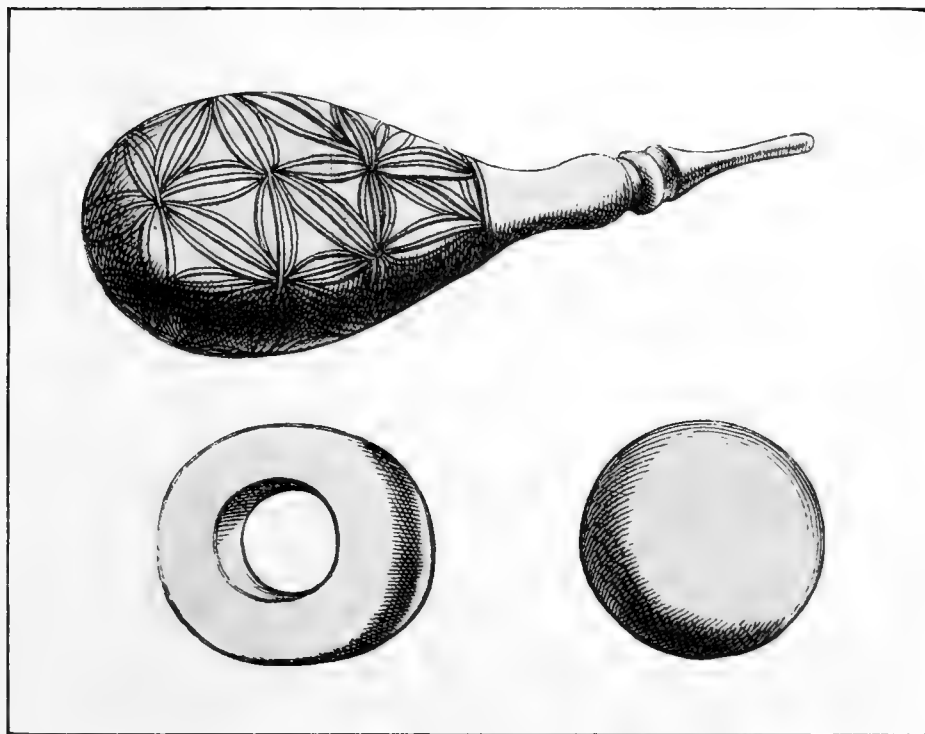


FIG. 4.—Rubber syringe, ring, and ball. (After Barrère.)

used by the natives to make tapers (StC, I, 319). At the village of Javita on the upper Atabapo, where there is a regular trade in resins, Humboldt reports having seen masses of several hundredweight (AVH, II, 357).

Bisi is a resin from an unidentified tree used by Indians for giving a gloss to their bows, etc. (ScD, 35).

Sapium jenmani or *S. cladogyne* and *Hevea* sp. were probably the sources whence rubber was originally derived. It was the Cayenne Indian who made balls, rings, and syringes (fig. 4)—the latter so much sought after by the curious—from the milk that runs from a liane,

which, from the structure of its fruit and flower, must be referred to the genus *Apocin*. As Barrère says, they collect a certain quantity of the milky juice, boil it for about a good quarter of an hour to give it a little consistency, and then get ready the molds which have been prepared for different things. These are usually made of a little clay, which they knead with sand so as to be easily broken. The molds for a syringe are shaped like a pearl or large pear, about 5 or 6 inches long. They cover these molds with several coats of this boiled material, on which they trace various designs (*traits figurés*) with a knife point or bodkin. They are then carefully dried over a little fire, and completed by blackening them in the smoke. The molds are then broken. They also manufacture out of the same material, wine vessels (*bottes*) and seals (*sceaux*), which stand water better than ordinary leather. The balls have plenty of elasticity, and when thrown will rebound five or six times. The rings are still more wonderful: Their spring is extraordinary, and they stretch infinitely. They are usually as large as the little finger, and are $1\frac{1}{2}$ inches in diameter. A ring, for example, that exactly fits the five fingers of one hand held close together can be made to stretch sufficiently to allow of its passing not only over the person's arm but over his entire body. It then contracts, and by its own elasticity returns to its original size (PBA, 141). La Condamine expresses similar wonderment, but adds some curious facts to his description: The rosin named cahout-chou, in those countries of the Province of Quito adjacent to the sea, is also very common on the banks of the Marañon, and serves for the same uses. When it is fresh, they work it with molds into what shape they please, and it is impenetrable by the rain, but what renders it the most remarkable is its great elasticity. They make bottles thereof, which it is not easy to break, boots, and hollow bowls, which may be squeezed flat, and when no longer under restraint, recover their first form. The Portuguese of Para have even learned of the Omagua to make squirts or syringes thereof, that have no need of a piston, or sucker; they are made hollow in the form of a pear when scooped, having a little hole at the small end, to which a pipe of the same size is fitted; they are then filled with water, and by squeezing them, they have the same effect as a common squirt. This machine is mightily in vogue among the Omagua; when they meet together by themselves for any merrymaking, the master of the house never fails to present one to each of his guests, and the use of the squirt with them is always the prelude to their most solemn feasts (LCo, 39). The Essequibo Indians used rubber to burn as candles, which gave a brilliant light (StC, II, 104). On the Orinoco the Otomac used rubber under the name of "caucho" to make their play balls (G, I, 168-172). The manufacture of such rubber playballs is thus described by Appun from among the Akawai of the upper

Cuyuni River: By making incisions in the trees (*Hevea*) the buck-women collect the "milk" in "sugar-loafs" turned out of banana leaves, and then with their fingers spread it in thin layers on the naked thigh, when it forthwith takes on a horny, sticky consistency. They roll this together with the flats of the hands into the shape of a ball and envelop it with successive similarly made layers until it reaches the size required. The ball becomes blackish on exposure to the air and hardens very quickly (App, II, 153).

I have been unable to identify Harcourt's gumma Lemnia (HR, 382-383): Schomburgk speaks of a yellow gum from a *Garcinia* (SR, II, 414) and a greenish resin from Bisi (ScD, 35).

24. *Beeswax*.—A century and a half ago, in Bancroft's time, this was usually formed by the Indians into round balls, weighing about 2 pounds each. A ball was often bought from the Indians near the sea, where it was plentiful, for a fishhook. This author says that the Indians had a method of purifying the wax and rendering it of a lighter color by melting, straining, and boiling it in water and wood ashes (BA, 231).

25. Vegetable oils and unguents include the following:

Carapa guianensis Aubl.—The caraba, or crabwood, of the Guianas, the andiroba of the Amazons. The Roucouyenne of Cayenne can preserve the seed for a year by burying it in the ground and making veritable silos of it; otherwise it will not keep longer than three weeks or a month. The Oyampi of the Oyapock River boil the seeds, expose them for several weeks to the air in a scooped-out tree trunk, crush them with their feet, and finally let them drip on an inclined palm leaf (Cr, 160). This description is practically identical with that given from British Guiana: At the season when the nuts fall they are gathered and, after being boiled, are put aside until they become half rotten. When they are in proper condition they are shelled and kneaded into a coarse paste. Troughs are prepared of naturally curved tree bark, one end being cut to a point. The shape of these troughs is, in fact, exactly that of the steel nib of a pen (fig. 5). These, having been filled with the nut paste, are fixed in a sunny place, slanting, with the pointed end over a vessel. The oil oozes from the paste, runs down the trough, and drips from the point into the vessel below (IT, 314). A far better and quicker method of extracting the oil is that which I have met with on the Pomeroon, where the nut paste is compressed in an apparatus very like a miniature cassava squeezer, whence the oil trickles down. Crab oil burns very well, but it is generally used for anointing the hair and skin and for mixing with paint. The Indian women . . . make constant use of it. When setting out on a journey a gourd filled with crab oil is sure to form part of the baggage (ScG, 269-270). When rubbed on their skins

it serves several useful purposes: It helps to withstand mosquitoes, softens the induration due to constant exposure, obviates excessive perspiration, and prevents them taking cold from the dews, rain, etc. (BA, 81). It is mixed with arnotta as a body paint.

Astrocaryum tucumoides.—The awarra palm. The Indians separate the flesh from the seeds in a wooden mortar and then extract the oil by means of a matapi (AK, 281).

Astrocaryum tucuma.—The akkoyuro palm (ScD, 99). Treated in similar fashion to the preceding.

Attalea speciosa.—The Indians make an oil from this, the curua palm (App, II, 79).

Maximiliana regia Mart.—The kokerit palm (ScD, 99). The seeds after being boiled are put in the sun to dry. They are then crushed, mashed up with the hand, and finally placed in a small

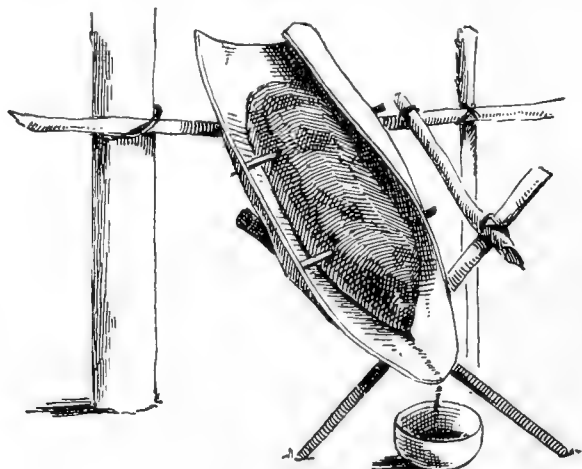


FIG. 5.—Manufacture of crab-wood oil.

form of cassava squeezer, whence the oil is expressed. Thus manufactured by the Makusi, they use it for dropping into "bad" ears. The oil can also be extracted by crushing the seeds, boiling them in water, and skimming the oil off as it rises to the surface by means of small pads of cotton fiber (IT, 314). Schomburgk describes it as a fine oil (ScG, 242).

Mespilodaphne pretiosa, the makeima of the Makusi.—The bark gives an ethereal oil. A decoction of it is used by the Indians for diarrhea and dysentery. The bark and leaves smell of cinnamon (App, II, 441).

Oenocarpus bacaba.—The turu palm. In the course of preparation of the cumu drink the Surinam Indians obtained an oil with which they anointed their hair (AK, 79-80). The shopkeepers of Pará buy patauaí oil (*Oenocarpus pataua*) and mix it in equal proportions

with olive oil, retailing the whole as "olive oil," from which indeed even the best judges can scarcely distinguish it (RS, I, 479).

Lecythis zabucajo Aubl. (SR, II, 338).—Sapucaya or Paradise nut.

Eugenia catinga Aubl. (= *Catinga moschata* Aubl.) (SR, II, 338).

Myristica sebifera Sw.—When thrown into boiling water the seeds supply a vegetable tallow which is used in the colony for candles (SR, II, 338).

There are two palms, which I have been unable to identify, mentioned by Gumilla as yielding an admirable oil. These are the veserri and cunama (G, I, 263). The fruit of the veserri is eaten by some nations, but others place them on the fire to boil, and extract from them a large quantity of very pure oil, utilized both for ointments and for food. From the cunama fruit, which the Indians call abay, they extract an oil comparable with that of olives. It serves the Indians for unguents and the Spaniards for food and lighting purposes (G, II, 249).

So also with cunuri and uacu. From the seeds of these two trees, apparently undescribed on the Alto Rio Negro, Orinoco, Casiquiari, Pacimoni, etc., the Indians prepare a paste resembling cream cheese in appearance and taste. The seeds are first boiled and then steeped for some days under water, after which they are broken up by the hand. In the boiling, a quantity of oil is said to be collected. . . . I first saw one of these trees (the cunuri, a Euphorbiacea allied to the india-rubber tree, but with simple leaves) near San Gabriel. . . . The other tree, whose products are quite similar to those of the cunuri, is called uacú (RS, I, 480).

There is no evidence that the Indians ever manufactured coconut oil for themselves.

26. *Turtle-egg oil* for ages past has constituted a very important item in the way of domestic use, trade, and barter, both on the Orinoco and the Amazon, its manufacture in these areas being practically similar. Gumilla, on the Orinoco, has described the process of manufacture as follows: They call these turtle terecáya. . . . After carefully washing, cleaning, and drying, they place quantities of the eggs in canoes, wherein young boys trample on them just as on our side the grapes are trodden upon to express the juice. When sufficiently filled the mass is exposed to the sun's rays and after a little while a very thin, clear, oily liquor rises to the surface. During this process each of the women places her large earthen pan on the fire, whilst the men, with thin shells devised for the purpose, skim the surface of the oil, which is next placed in the pans, where it is boiled and purified. It is finally stored in vessels (G, I, 292-298).

Bates has left us the following account as witnessed by him on the upper Amazon: When no more eggs are to be found, the mashing

process begins . . . The whole heap is thrown into an empty canoe and mashed with wooden prongs; but sometimes naked Indians and children jump into the mass and tread it down, besmearing themselves with yolk, and making about as filthy a scene as can well be imagined. This being finished, water is poured into the canoe and the fatty mass then left for a few hours to be heated by the sun, on which the oil separates and rises to the surface. The floating oil is afterward skimmed off with long spoons made by tying large mussel shells to the ends of long rods, and purified over the fire in copper kettles (HWB, 313).

The Orinoco Indians twice daily use turtle-egg oil for anointing themselves (G, 1, 293). Much employed for culinary purposes by the Brazilians . . . The turtle oil (*mantega de tartaruga*) constitutes a branch of commerce in the province of Para (ScD, 39). Used both for lighting and for cooking; millions of eggs are thus annually destroyed (ARW, 323).

27. Another animal oil is that obtained from the guacharo or salies birds (*Steatornis caripensis*) on the upper Mazaruni (BB, 386), but no details of manufacture are given.

28. With perhaps two exceptions, pigments are all of vegetable origin. The following plants give colors of a more or less reddish nature:

Bignonia chica Humb.—The pigment obtained from this plant is known as caraweru to almost all of the British Guiana tribes (SR, II, 208), as carivaveru (ScO, 307), as carawelu (Da, 274), as carayuru on the upper Rio Negro, and as barisa or barahisa to the Warrau. I believe it to be identical with the tamiremui of the Trio and Ojana (GO, 2) in Surinam; with the biauuro of the Arawak, etc., on the Demerara River (Da, 213); with the kariatou of Cayenne (PBA, 197–198). In our own colony its preparation [by a process of fermentation] is confined exclusively to the Wapishana, Taruma, and Makusi. The leaves are first of all slightly dried in the shade, then thrown into a large trough or pot with water, in which on the second or third day they have already begun to ferment, whereby the red material is deposited as a powder. When this process is over the powder is washed until all foreign particles are removed. The deposit is next laid out in the sun to dry and then packed in small boxes made of palm leaves. The Indians use this delicate powder for face painting, for which purpose it is mixed with a sweet-smelling gum (SR, II, 393). A similar method of preparation is followed on the upper Rio Negro (KG, II, 237). Im Thurn and B. Brown (BB, 162) instead of a fermentation speak of the water in which the leaves are soaked as being boiled. Thus, the dried leaves are boiled for a few minutes over a fire and then some freshly cut pieces of the bark of a certain tree and a bundle of twigs and fresh

leaves from another tree are added to the mixture. The whole is next boiled for about 20 minutes, care being taken to keep the bark and leaves under water. The pot is now taken from the fire and the contents are poured into bowls and allowed to subside. The clear water left at the top is poured off and the sediment, of a beautiful purple color, is put on a cloth, where it is allowed to dry; after this it is scraped off and packed in tiny baskets woven of the leaves of the kokerit palm (IT, 316-317). The little packing boxes (sec. 387) may be made from the young leaves of the curua palm, *Attalea speciosa* Mart. (BB, 162) or the kokerit. On the Rio Tiquie the pigment is kept in a carved tube made from a species of palm fruit (KG, I, 249). The Akawai on the Barima obtain their supplies of the paint in barter from inland tribes (SR, I, 202). It dyes a bright orange (ScD, 99). It is used as a body or face paint by the Dauri (ScE, 167), Arekuna (SR, II, 209), Uaupes River Indians (KG, I, 174-176), and others.

Bixa orellana Linn.—Its derived red pigment is spoken of as faroah, arnotta or arnatto, roku, uruku, or ruku, and in Surinam as orlean (AK, 175-176) by the Dutch, and cosowee by the Indians (St, I, 384), a name still retained in our colony by the Barama River Carib as kuseve; it was known as bichet to the Carib (AVH, III, 74), anoto to the Tamanac, majepa to the Maypure, and achote to the Spaniard (AVH, II, 203); the Moruca River Arawak call it shiraballi, and the Warrau mubosímo. Roku, ruku, uruku is said to be the African name (WJ, 80), or a Brazilian word, while its botanical term *Bixa* is derived from the ancient language of Haiti, the island of Santo Domingo (AVH, II, 203). After being well washed and scoured with the hands, large quantities of the seeds are made into an infusion, the water remains colored, and next day the pigment is found at the bottom, and the water as clear as ever. After carefully pouring off the water the achote or coloring matter is exposed to the sun, and when half dry it is made up into balls, which the Indians keep for pounding up with oil, and for anointing themselves with daily (G, II, 250).

Crévaux gives a somewhat more detailed description of its preparation by the Carijona of the upper Yapura (Cr, 366). Instead of being kept in lumps or cakes, etc., it may be stored in a liquid condition in tubes made of hollow bamboo stems (IT, 316-317). On the Orinoco it was kneaded with turtle-egg oil into round cakes, etc., and when turtle oil was wanting, some tribes mixed crocodile fat with it (AVH, II, 203). Bancroft says that the ruku is mostly cultivated by the Indians and its seeds macerated in the juice of lemons in which the "gum" of the mauna tree (*Copaifera*) has been dissolved (BA, 45). In addition to its employment as a face and body paint, Carib of both sexes would seem to have an especial

predilection for rubbing it into the hair over the forehead. They and the Warrau are said to mix it for use with *Bignonia* pigment and *Protium heptophyllum* gum.

Bellucia Aubletii Naud (= *Blakea trinerva*).—The mespil of the Creoles. Itarra is the Arawak name both of the tree and of the red dye obtained from it. The older the tree, and the more freshly used, the better is the stain. The outer bark having been removed, and its cortical portion sliced off, it is scraped with a knife, the moist shavings thus produced being pressed together between the fingers and thumb and then rubbed upon the article to be dyed. At first it is somewhat sticky, but soon dries and increases in depth of color during the process. This paint is used on paddles, the insides of calabashes, etc., and with the action of water becomes much darker.

Coussapoa latifolia Aubl.—A red paint is obtained from the bark and from the seeds, but it is not good as a dye, as it does not last long. The Arawak call it maba-bunakara.

Genipa americana.—The launa or lana tree. This is the tapuriba (AK, 185) or tapowripa of the Surinam Indians (St, I, 384), the tabuseba of the Carib (ScO, 258), and very probably the jagua of the Orinoco (G, I, 201). This is another of the very many economic plants cultivated by the Indians. For example, the trees which are now found growing on the banks of the upper Manawarin (Moruca River) are said to have been brought there by the Carib from the Corentyn. The internal substance of the fruit being bruised and macerated in water affords the paint so delightful to the Indians and which in color nearly resembles indigo. With this they ornament their bodies by drawing a variety of figures . . . These figures, when thus drawn on the skin, are indelible for a term of 9 or 10 days by any art hitherto discovered. When that time has elapsed they usually begin to disappear, and are soon after invisible (BA, 75).

Henriettea succosa DC.—The sakuapéra of the Arawak and Warrau.

??*Homalium* sp.—The buri-badda, "bat's finger," of the Arawak, the sa-amahusi of the Warrau. A reddish milk flows when the vine is cut, but it is not a good dye as it does not last.

Maparakuni erythroxylum.—Schomburgk speaks of a red dye derived from this plant (ScD, 99).

Pterocarpus guianensis Aubl.—On the Essequibo they showed me, says St. Clair, some of the arrisaura berries, with the juice of which I have frequently seen their faces, thighs, and arms stained in fantastical figures of a beautiful clear blue color. The native Indians take great pleasure in adorning themselves with this juice upon any particular occurrence in their tribe, such as a marriage, the election of a new chief, or going to make war (StC, II, 109). The Barama River Carib call the plant karasaru. They obtain it from the Cuyuni River.

Renealmia exaltata Linn.—Kuruwatti of the Arawak. A bright reddish purple juice [from the fruit] used by the Indians for ophthalmia (BA, 109). Also employed as an ink, a dye for cotton, etc., and on the Pomeroon is said to be the material with which the tattooing was done in the old days.

Other red pigments the vegetable origin of which I have so far been unable to identify are the buruburuli of the Demerara River (Da, 213), and the wiliko, a brown-red, from the Trio Indians (GO, 2).

29. The Carib use a reddish clay pigment which is often to be seen transported in the shape of a roundish ball just about large enough to clutch in the hand.

30. *Inga laterifolia* Mig.—Shirada or serada, the Arawak name of the tree from which the scrapings taken from the inner portion of the outer bark are rubbed with soot to form a black dye. This gives a glossy black appearance to such articles as paddles, basketry strands, and the insides of calabashes, on which it may be smeared. The fruit of the shirada is eaten by the Arawak.

The allakoidde was a black body paint employed by the Trio, but no information is forthcoming as to its origin or composition (GO, 2). Kuari is a black dye made from the fruit of a wild species of guava (sec. 589).

31. With regard to yellow pigments I have knowledge of a particular clay used by the Waiwai (JO) and the Roucouyenne (Cr, 108) and of a vegetable pigment derived from the lukunanijio, the Arawak name of a plant that I have not succeeded in identifying. The fruit of the mankaratice was used for coloring the ite-fiber hammocks yellow (ScQ, 254).

32. Out in the savannas, on the Ireng and elsewhere, there is a large amount of greasy white clay, a kind of kaolin, that may occasionally be used as a pigment.

CHAPTER III

TWINE, CORDS, AND BANDS: COTTON

Twine: Single ply (33); spindle (34); two-ply (35); three-ply (36); multiple ply (37).
Three-yarn scale lines (38).

Cords and bands (39) (A) made without special apparatus:

Tatting: With two threads (40); with three threads (41).

Strand plaiting (42); combined with overcasting (43).

Overcasting (44).

Loop plaiting: With 4 loops (45); with 5 loops (46).

Cords and bands (B) made with special apparatus:

Single flat split-eye needle (47); two flat split-eye needles (48); single hooked needle (49); two hooked needles (50); four split-eye rounded needles (51); six split-eye rounded needles (52); two long cane sticks (53); a single stick (54); loom (55); looping on a frame (56).

33. Single-ply cotton twine. After the cotton has been picked it is put in the sun to dry, but not for more than a day or two. It is then stored in a quake or openwork basket, where it may remain for any length of time, provided it is not allowed to get wet. When about to be used the foreign matter is carefully picked out and the whole teased, bit by bit. This teasing process is important. A very small handful is pinched up, teased out with the fingers, "smacked," so to speak, between the palms of the hands, and thus alternately teased and sharply squeezed into a thin circular pat about 4 to 4½ inches in circumference. During the "smacking" process there is a slight simultaneous rotation at the wrists. A large number of such pats are placed one on top of the other, forming a pile or cylinder about 6 or 7 inches high. This cylinder is then pressed laterally, folded in its length, and gradually stretched. It is again folded in its length and similarly stretched, so as to form a soft pad about 2 feet long. This pad of teased cotton is next twisted into a spiral, loosely at its distal extremity, but progressively tighter toward its proximal, which is again stretched previous to the whole being lightly wound around the left forefinger and wrist (fig. 6), its distal and much larger end hanging loosely over the forearm. That portion of its proximal extremity between the two thumbs is now gradually and very carefully teased out and stretched, any untoward slipping being prevented by resting the third finger of the left hand on the bent forefinger of the right, which acts as a fulcrum. On completion of the stretching, the amount and exact degree of which will depend upon the thickness of thread desired, etc., the portion of cotton just stretched is attached at its proximal extremity to the spindle (fig. 7) through the nick or hook at the

top of its shank. The base of the shank—that is, the portion below the guard—is now rolled with the flat of the open right hand sharply down the thigh (fig. 8), and so sent spinning on itself with the momentum just imparted. While thus spinning freely, more of the pad is unwound from the arm, the cotton is again carefully teased out and stretched between the thumbs, and the spindle, gradually coming to rest, is again spun. The whole process, indeed, consists of these three factors: The unwinding and rewinding of the pad, the stretching out and teasing of that portion of it between the thumbs, and the spinning of the spindle down the thigh. When a convenient length of cotton thread (say, 2 or 3 feet) has been spun, it is rolled taut around the spindle shank and looped into the hook,



FIG. 6.—Spinning the cotton—stretching and winding it on the wrist.

and the process thus repeated. The degree of coarseness or fineness with which the cotton may be spun into twine will depend partly upon the use for which it is intended, the two extremes being met with in the rough string forming the basis of the cotton hammocks and in the delicate twine ornamenting the butt end of the Arawak arrow. Another condition that has to be taken into account in this connection is the quality of the cotton, the special properties of its different species being locally recognized. I learn, for instance, that the Wapishana have distinctive names for at least six different kinds of cotton (JO).

34. The spindle employed in the manufacture of cotton twine consists of a tapering wooden shank passed through a circular guard, its distal extremity being either nicked or provided with a small

hook (fig. 7). The bone hook of the Oyana and Trio spindles (GOE, pl. VII, figs. 7, 8) may be somewhat more complicated (fig. 9). The ordinary material out of which the guards are and were cut would seem to be "bone" (BB, 54), as tapir (Cr, 296), or turtle carapace, as with the Makusi, Patamona, and Wapishana. On the Pomeroon I have observed them made of two pieces of calabash (fig. 10 B) with their convexities outward. The guards may be incised with various patterns, as those of the Oyana (GO, 9) in Surinam (fig. 10 A) and of the Wapishana (fig. 10 C).

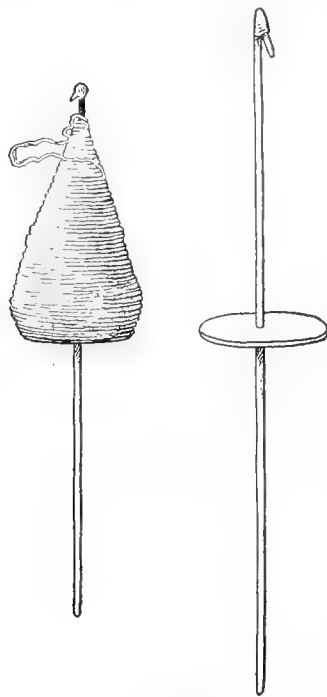


FIG. 7.—Spindles.

35. Two-ply cotton twine. Having made two spindlefuls of single-ply thread, the ends are attached together to the hook of a third and larger spindle, the shank of which is spun in a direction up the thigh with the right hand. To insure uniformity and regularity with the two single-ply threads as they are gradually unwound from their respective spindles, they are run over the left forefinger and through the fork between the ring and little fingers, respectively. As each convenient length of now 2-ply thread is spun, it is rolled taut around the spindle shank and looped into the hook and the shank again spun.

36. Three-ply cotton twine is often manufactured by Wapishana and neighboring Indians and may be used in the crossbars of their hammocks and wherever extra strength is required. To make

such a yarn the woman will take a ball of ordinary single-ply thread and tying the end of its strand around her right big toe, will lock it into long loops (fig. 11) and form a chain of them as far as her arms will reach. She will next wind this chain around and around her foot immediately behind the toes, finally bringing it forward from behind on the outer side of the base of the little toe; then continue the chain, roll it around again, and so repeat the process. When a sufficient length has been obtained she will unwind the chain from off her foot, wind it into a ball, fix the end onto her spindle, and roll it length by length down her thigh into a single yarn.

37. Multiple-ply cotton twine. A dozen or more single-ply cotton threads may be spun together on the right thigh downward to form a multiple-ply yarn. Such yarn is softer to the skin than

the other varieties and hence is often used as a waist or shoulder cord.

38. Three-yarn cotton scale lines made by Wapishana men and women for the hammock are worked on a different principle by means of a bow drill (fig. 12). Here we have three 8-ply cotton yarns each tied at one extremity to a post and attached at the other (after being passed through one of the three apertures made in a piece of calabash) to a crosspiece inserted at right angles into the end of a length of arrow reed. The perforated calabash may be replaced by two bits of stick attached crosswise. Behind the crosspiece in the reed is another circular calabash plate, the object of which I am doubtful about, and behind this again



FIG. 8.—Spinning the cotton—rolling the spindle down the thigh.
(After J. Ogilvie.)

is a double turn of a cotton bowstring which can be tightened or loosened as required on the bow held beneath with the right hand. The tightening or loosening is effected by pressing or relaxing the bowstring against the bow with the right palm. The left hand holds that portion of the reed wound with the string, but allows a moiety



FIG. 9.—Bonetips of
Oyana and Trio
spindles.

of the latter to enter the palm below the thumb and the other to emerge from between the middle and ring fingers. When the right hand pushes the bow forward the left-hand grip is loosened and the right grip tightened, so as to allow the arrow to roll with the bowstring. When it draws the bow back the left-hand grip is tightened and the right one loosened, so as to permit the bowstring to slip. The result of this forward and backward movement is to roll the arrow reed in one

direction only, somewhat after the manner of a watchmaker's drill; through the crosspiece this motion is imparted to the three yarns, the regularity of their twist being assured by an assistant

(woman or child) carefully supporting the perforated piece of calabash and walking with it at a pace proportionate with the twist toward the post on which the three yarns are tied (JO).

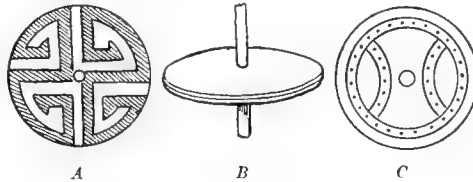


FIG. 10.—Spindle guards. *A, C*, bone; *B*, calabash.

39. Cotton cords, bands, etc. Cotton is largely employed in the manufacture of bands or cords used according to their width and contour as waistbands (for supporting the loin cloth, etc.), forehead bands, anklets, armlets, body cords, as supporting strings for the

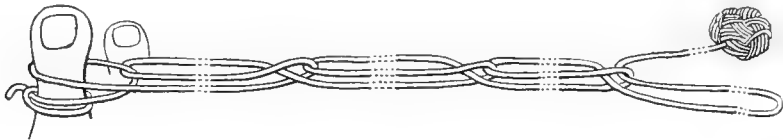


FIG. 11.—Method of manufacturing three-ply cotton twine.

satchel form of pegalls, as slings for clubs, and for other purposes. The procedures connected with the making of these different articles will now be described, according to the methods or apparatus employed.

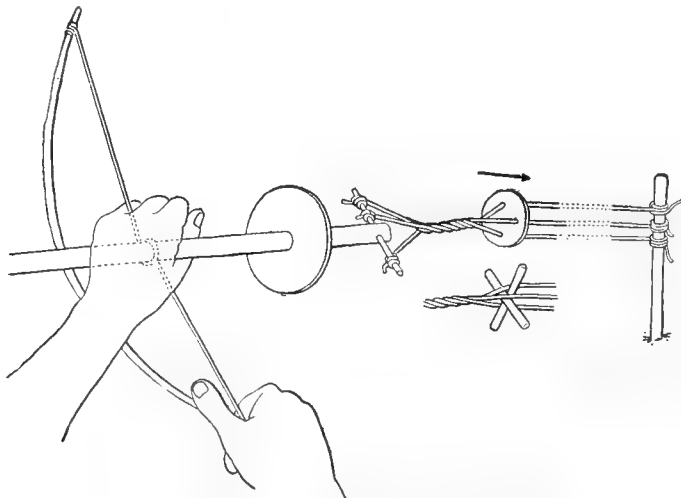


FIG. 12.—Bow drill for making three-yarn cotton scale lines.

40. Cording. This is practiced among the Warrau, the left thumb and forefinger replacing the two "arms" of the flat lyre-shaped ivory apparatus that used to grace our grandmothers' workboxes for making the fine silken cords to which their eyeglasses, etc., were

attached. If one cotton string is used (fig. 13 A) the process is as follows: Operations are commenced by making a slipknot (*k*) at the proximal extremity (*a*) of the string, which is held more or less taut by being wound over the little finger, the loop formed by the slipknot being passed over the forefinger (LF); the distal or ball end (*b*) of the

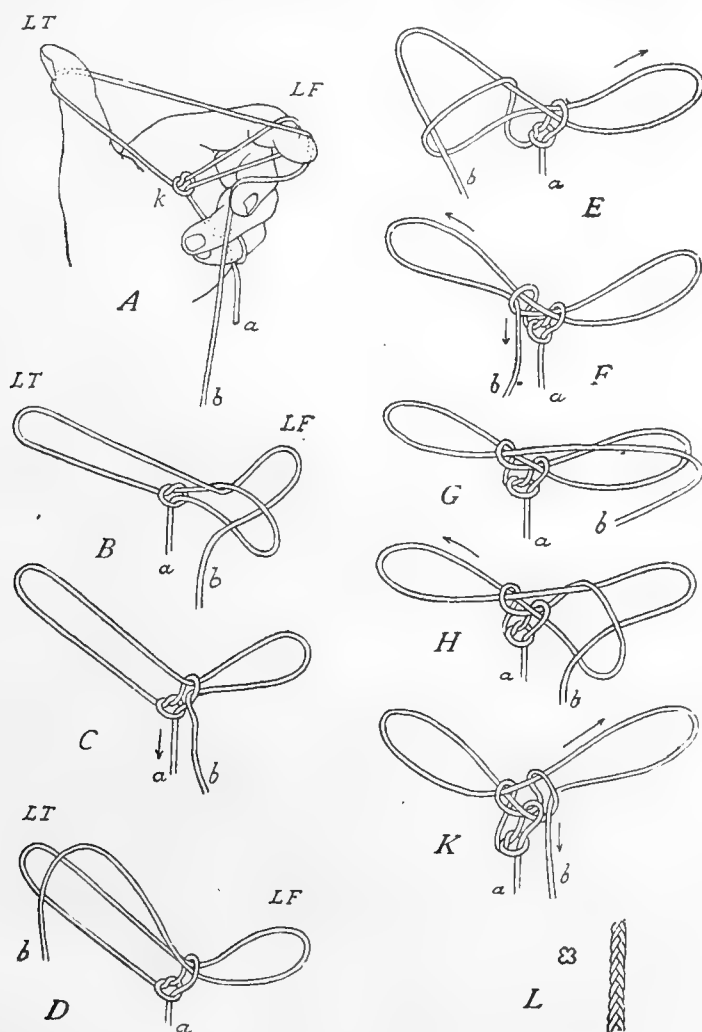


FIG. 13.—Cording with one string.

string is looped over the thumb (LT) and then over the forefinger. The first loop on the forefinger is now passed over and in front of the second loop (B), and tightened (C) by pulling on the proximal end of the string. The distal extremity is next looped on the thumb (D), the previous loop there being passed over it in similar fashion (E), the whole being next tightened by pulling—first, on the upper half of the

loop passing over the forefinger; second, on the upper half of the loop passing over the thumb; and, third, on the ball end of the string (F). It must be borne in mind that the illustrations, to maintain their diagrammatic character, do not actually represent the complete tightening described. The distal end is next looped over the forefinger (G), the loop, already behind it, passed in front (H), and tightened again by three successive pulls as before (K). The process is then repeated on the thumb, again on the forefinger, and so on alternately until the square-sectioned cord (L) reaches the length desired. In tightening, the string must not be pulled on to too great an extent, a contingency which will prevent the string slipping through where necessary; it is only the proximal extremity which has to be kept fairly taut

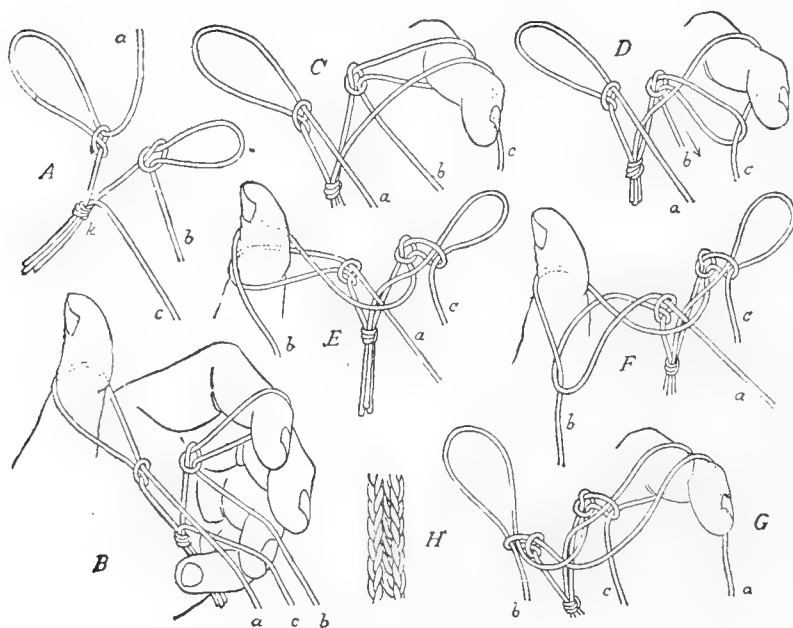


FIG. 14.—Cording with three strings.

by regularly unwinding from, and rewinding on, the little finger (WER, III).

41. Cording (continued). The Warrau also practice a more complicated form of cording by using three strands (fig. 14). All three strings, of the necessary length required (A, *a*, *b*, *c*), are tied together at their extremity (*k*), and a loop made in two of them (*a*, *b*) close to the knot. These loops are now passed respectively over the left thumb and forefinger (B), tightened, and the knotted end of the strings fixed in position between the little finger and palm, while the free ends are held more or less taut by an assistant, such assistant being occasionally replaced by the maker's own big toe. [In the accompanying diagrams it must be noted that, for clearness only, the

loops are represented as being loose.] The third strand (*c*), the one without a loop, is now passed over the top of the forefinger in front of the loop (*b*) already there (*C*), the latter being then passed over it and tightened by dragging on its free end (*D*). The same string that has just been pulled on (*b*) is now passed over the tip of the thumb, in front of the loop (*a*) already there (*E*), the latter being then passed over it, and rendered taut (*F*). The same string that has just been pulled on (*a*) to effect this is next passed over the tip of the forefinger (*G*) in front of the loop (*c*) already there, the latter passed over it, and tightened. The process of manufacture is thus repeated between these two digits in the following sequence: Loop on one digit, string in front of it, loop passed over string and tightened, its extremity now becoming the string in front of the loop on the other digit. The completed cord (*H*) is shown (WER, III).

42. Strand plaiting (fig. 15). There is an eight-strand cotton cord met with among the Warrau which is made by passing over the big toe, etc., four skeins of cotton twine, which are tied together above, but divided below, the eight strands so derived being then spread out more or less on the flat (*A*) by holding them between the thumb and forefinger of either hand. Starting with the highest on the left

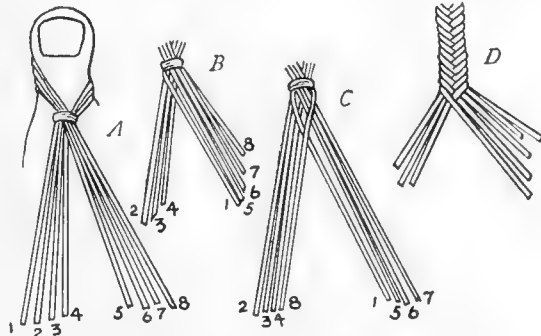


FIG. 15.—Strand plaiting.

side, this is passed over the next three (*B*) on to the right side, where it becomes the lowermost. The same thing is done with the right side, passing the highest strand over the next four (*C*) to become the lowermost on the left side. The process is repeated on the left side, and then on the right—passing the highest strand over three and four successively—and so on alternately to whatever length of cord is required (*D*). The pattern of this cord is named after the mohotta, a fish with an arrangement of scales which it is said to resemble (WER, III).

43. Strand plaiting combined with overcasting (fig. 16) is seen in the cotton handle covering of the old-time Akawai dagger club (sec. 154). A certain number of strands—three in the present case, though more might be utilized—are cut to a length of from $2\frac{1}{2}$ to 3 feet. Loop the first (*a*) around the handle in two whorls turned in opposite directions (*A*) and then approximate the two whorls (*B*). Now place the second string (*b*) in similar fashion above the first, and the third (*c*) above the second, approximating all three (*C*). Commencing with

the free end of the topmost strand (*c*), let us say the right (for descriptive purposes), loop it around the handle, and, passing it under itself, pull it out on the left-hand side (*D*). Now approximate to the others and tighten (*E*). Next, commence with the free end of the topmost strand on the left, loop it around the handle as before, and, passing it under itself, pull it out on the right-hand side. Taking thus each topmost strand alternately right and left, and repeating the

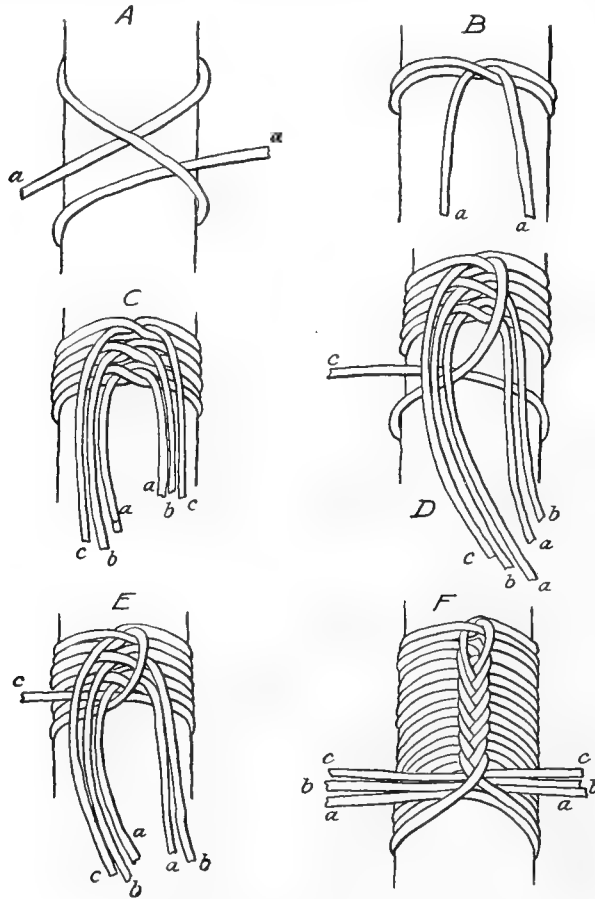


FIG. 16.—Strand plaiting combined with overcasting.

process, there is ultimately derived the figure diagrammatically shown in *F*.

44. Overcasting (fig. 17) is employed by Arawak for the fixation of smaller-sized feathers to strings. Around the toe or other suitable support some three or four skeins of cotton string, according to the thickness of completed cord required, are wound. These are tied above by the end of cotton attached to the ball, which now passes in and out between the two halves of the skeins so as to overcast them.

During the whole procedure the skeins are not divided below, but held more or less taut by the assistant. Each overcast, as it is completed, is tightened, not only by pulling on the cotton strand itself, but also by squeezing it up with the left thumb nail, except that, at regular intervals, but on opposite sides alternately, an overcasting loop is left slack. It is into each of these slack ones that the feathered quill (sec. 80) is ultimately bent over and tied. Feathered cords on this pattern are wound around the distal extremity of the medicine man's rattle (WER, III). Another example of overcasting (fig. 18) is to be seen in the head circlets of Makusi and other women, where the procedure is utilized to keep the four *itiriti* strands that constitute the basis of the ornament in place.

45. Loop plaiting with four loops (fig. 19).—Three of the loops are passed one in between the other, the fourth alone being directed over and under as in orthodox plaiting. A cotton string 20 to 25 feet long is wound four times, in the form of a skein, from left palm to over big toe, and its extremities knotted there, with the result that we have four loops which are held taut by means of the first and third fingers of each hand (A). As the palms are turned more or less up during the progress of manufacture, the four sets of loops, for descriptive purposes, may be spoken of as two outer (*o* on first fingers) and two inner (*i* on third fingers), these being slipped from one digit to the other in regular sequence. Thus, with the strings all taut, starting with the inner loops, these change fingers (B) by passing one loop *inside* the other; the same is then done with the outer loops. This is followed by a change in place between the (operator's) right outer and left inner loop, which are *not* passed one through the other, but the former *over* the latter. The whole process is then repeated in the same order—inner loops, outer loops, right outer and left inner loop—until the length required has been obtained. To

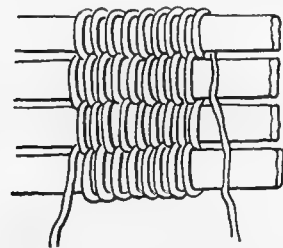


FIG. 18.—Overcasting for head circlets.

tighten the successive "plaits," the big toe of the free foot is squeezed in between the two inner loops after each substitution. When a longer cord is desired a longer twine will be used, and under such circumstances the four loops are hooked to a projecting branch, forked stick, etc. (in place of the big toe), and the action of the free foot, after each substitution of two loops, replaced by the hand or stick of an assistant. When a shorter cord is manufactured, the action of the free foot, etc., is replaced by pulling the

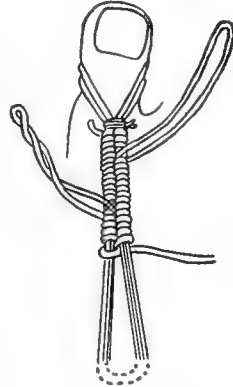


FIG. 17.—Overcasting for feathered strings.

two hands (with their contained loop) widely apart after each substitution. The completed cord is more or less flat (C) on one surface, convex (D) on the other, and in section (E) a trefoil, with one of the foils larger than the other two (WER, III).

46. Loop plaiting with five loops (fig. 20).—Also among the Warrau. Here the cotton string, some 6 feet or so, is wound five times round the toe so as to give five loops. Two of these (*a*, *b*) are held taut in the left hand (A), and three (*c*, *d*, *e*) in the right. In the former case, *a* is fixed on the thumb and first and second fingers and *b* on the third; in the latter *c*, *d*, *e* is supported on the first, second, and third fingers respectively. As the palms are here also turned up more or less in the process of manufacture, loop *e* is on a level lower than all the others. This is the first position. "Plaiting" is started by slipping

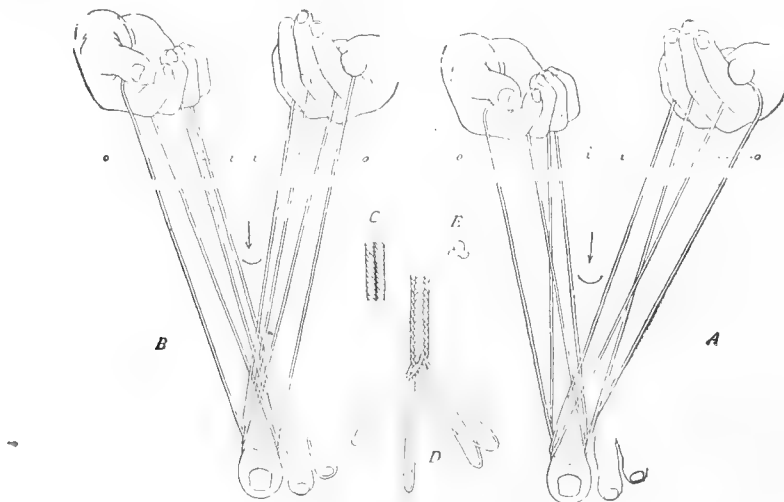


FIG. 19.—Loop plaiting; with four loops.

e, the lowest of the three, off the right third finger *through a* on to the left forefinger, which is flexed well over it, at the same time slipping *a* off the left thumb and forefinger on to the left middle finger (B); the plait is then tightened, by the free foot, an assistant, etc., in the manner already explained in the previous paragraph. The right thumb is next inserted into *c* and the right third finger into *d* at the same time that the right middle finger is taken out of it and placed in *c*, the whole being tightened again. This, the second position (C), is practically the reverse of the first. Plaiting is again started by slipping *b*, the lowest of the three, off the left third finger through *c* on to the right forefinger, which is flexed well over it, at the same time slipping *c* on to the right middle finger and then tightening as before; the left thumb is now inserted in *e* and the left third finger into *a* at the same time that the left middle finger is taken out of it

and placed in *e*, and tightening again. This, the third position, is identical with the first (A), the succeeding plaits taking place just as before—alternately slipping off the lowest of the three loops from one hand into the upper of the two loops on the other. The cord so produced is flat (D) on one side, convex (E) on the other (WER, III).

47. We have now to deal with a series of cotton cords, etc., all of them manufactured with more or less special apparatus:

With a single flat needle (pl. 8).—This method is peculiar to the Carib portion of the community. Given a ball of cotton, one extremity from off it (*a*) is wound around all four fingers of the

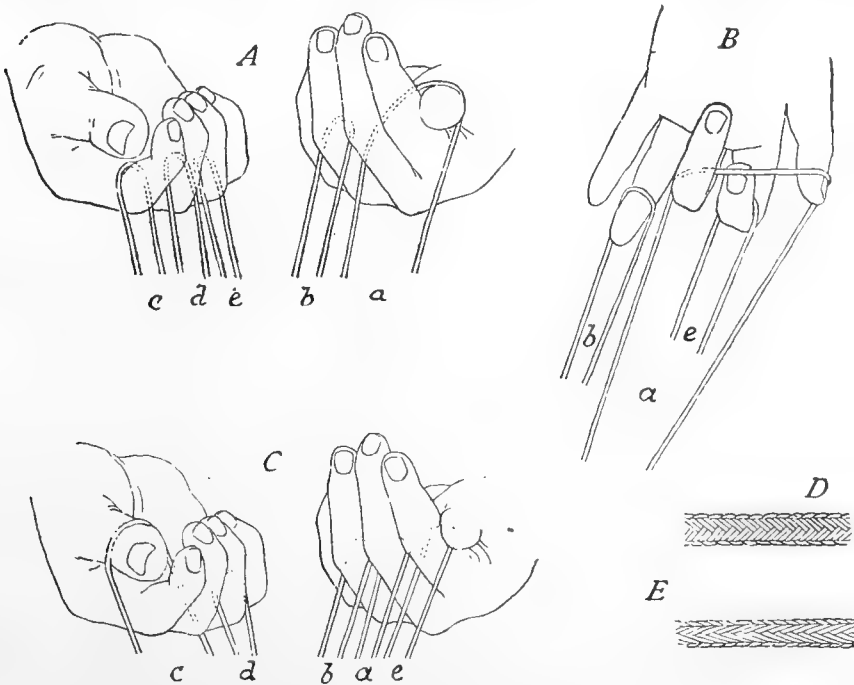


FIG. 20.—Loop plaiting; with five loops.

left hand three times, a fourth loop being passed between the middle and ring fingers, the twine being otherwise kept in position by the thumb (A). The needle, a flat tapering piece of wood about 3 inches long, split at its wider end to form an "eye," is passed under the two outer loops and threaded by wedging the cotton into the split (B). In this and in succeeding illustrations the left hand is purposely not represented, in order to render the varying positions of the different parts of the thread more clear. The needle is next pushed onward, and with it its contained thread, which, in its passage through the two vertical loops, is clutched tighter in direct proportion as the loops are kept more taut by the thumb, etc.

Once through, the needle is removed, and the size of the horizontal loop (h') diminished by carefully pulling on its ball end (b , C) until it is just a trifle greater than the width between the two outer vertical loops. The needle is again inserted, but on this occasion under the two middle vertical loops, as well as under the two extremities of the horizontal one (D); it is once more threaded (E) and pushed through, so as to form a second horizontal loop (h'' , F), which is then reduced to suitable size as before. The needle is now inserted under the two horizontal loops alone (G), the whole is tightened, and the vertical loops removed from off the fingers to be firmly tied together with the free end (a) of the cotton (H), the article in the course of its subsequent manufacture being now held as depicted (K). Thus, fixing the needle, and threading, a third horizontal loop is formed (h''' , L). This is similarly reduced, the threaded needle passed under the two last-manufactured loops (M),

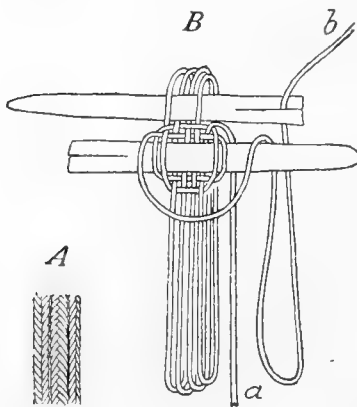
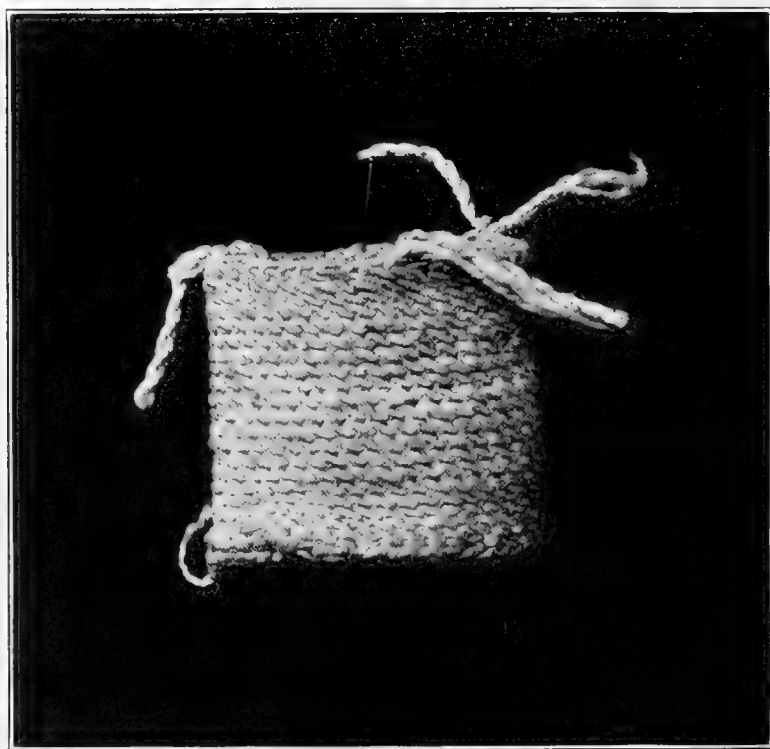
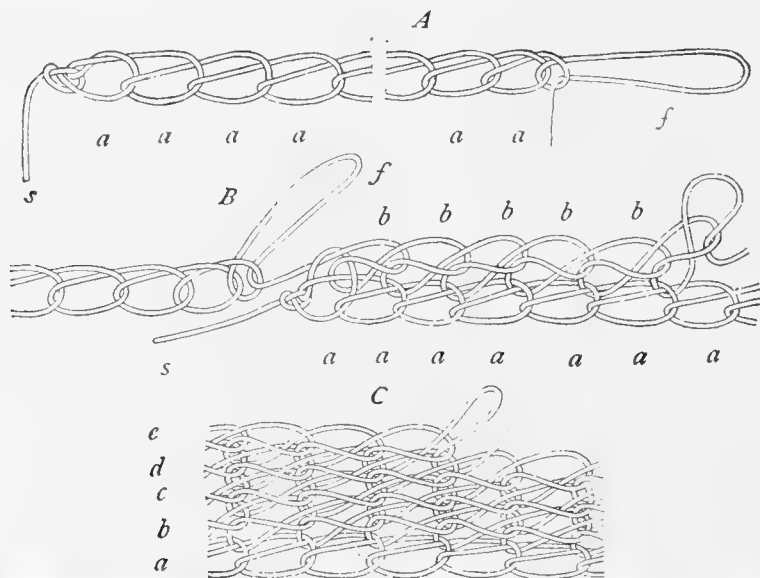


FIG. 21.—Cotton-cord making; with two flat split-eye needles.

and so a fourth horizontal loop produced (h'''' , N). Indeed, putting it shortly, the whole process consists of but a repetition of passage of needle under the two immediately preceding loops, threading it, and tightening the newly formed loop ready for the needle again. The illustrations (H to O), being diagrammatic, purposely only indicate exactly one-half of the cord. Portion of the completed cord is shown (P), from the aspect in which its manufacture has been described, with all the horizontal loops squeezed, as it were, into a semi-diagonal position. On the opposite

aspect, however, owing to the ball end of the cotton necessarily intervening between every successive horizontal loop, the appearance of the cord is somewhat asymmetrical (Q), a feature which becomes still more marked in cross section (R) (WER, III).

48. With two flat needles.—Certain of the Carib have developed the above procedure by using two needles, so as to produce a comparatively wide band (fig. 21 A), which is manufactured on the following lines: As soon as the two horizontal loops have been completed (pl. 8 G) the article is turned right round, a second needle is inserted under the four vertical loops in front of the original needle, in an opposite direction, of course, now (fig. 21 B), and two horizontal loops worked on it, as already illustrated (pl. 8 B–G). Directly these latter have been made, the article is again reversed, and two horizontal loops worked on the first needle. The process



D

COTTON BAND MAKING, WITH A SINGLE HOOKED NEEDLE

A, B, C, Cotton band making with a single hooked needle. D, Cotton band anklet made with a single hooked needle. Carib.

is thus alternately repeated: Two horizontal loops on one needle, a reversal, two horizontal loops on the other needle, and so on until the required length of band is reached (WER, III).

49. With one hooked needle.—Crochet (pl. 9). Carib, Makusi, and other women crochet anklets and armlets, working them on the limb itself, or around a wooden cylinder of about the same circumference as the ankle or arm which it will subsequently grace. The hooked needle employed is a thin tapering wooden pencil, though all variations in material and shape approaching the orthodox European crochet hook are availed of; on occasion I have observed a bent wire used. Starting with one end (*s*) of the string (A), a chain is made of a number of loops (*a, a, a*) until a length equal to the circumference of the ankle is reached; a loop independent of the previous one—that is, a free one (*f*)—is now made and tied to the proximal end of the string (*s*), though for clearness this actual tying together is not shown in the illustration. The second row of loops (*b, b, b*) is next made, not only as before, dependent upon one another, but each is also dependent on every consecutive two in the first row (B). The third and succeeding rows of loops (*c, d, e*) are made on a plan identical with the second, and thus row after row (C) is added until the desired width is obtained. The completed article (pl. 9 D), like the next to be described, reminds one, in general appearance, of a knitted woollen serviette ring. By sewing together the lower edges of such a ring, a bag (pl. 85 A, B) can be made (sec. 388).

50. With two hooked needles.—Crochet (continued). Warrau women will crochet cotton anklets on two delicate hooked slips of wood about $2\frac{1}{4}$ inches long as follows (fig. 22): Holding one of these needles (*m*) horizontally between the left thumb and forefinger (A) the end (*d*) of a cotton ball is wound over it, say, seven times, so as to form a row of seven coils (a^1 to a^7). The second needle (*n*), now held parallel with and above the first in the right hand, catches up (B) the first coil (a^1), hooks up a piece of the proximal end (*p*) of the cotton string (C), and passes it outward, so as to complete at the same time the first loop of the first row (*a*) and the first loop (b^1) of the second row (D). The same needle (*n*) now catches up the second coil (a^2) of the first row (E), hooks up another piece of string (F), and passes it outward so as to complete at the same time the second loop (a^2) of the first row and the second loop (b^2) of the second row (G). And thus the process goes on from right to left until the operator has two rows (H) each of seven loops (a^1 to a^7) and (b^1 to b^7). The lower needle (*m*) is next pulled away, and the upper (*n*) with its loops turned right round (J), so as to take the place of the former in the piece just manufactured; that is to say, *m* is reinserted and catches up from *n* the first loop (b^7) on the right (K), hooks up another

piece of cotton, just as before, to complete the first loop (b^7) on the right of the second row, and at the same time the first loop on the third row (c^1). Horizontal rows, each of seven loops, are thus superimposed, one on top of the other (L), until a sufficient length is obtained, when the first and last rows are worked into one another to complete the anklet ring.

51. With four rounded split-eye needles (pl. 10 A).—Cords made with four needles (fig. 23 A) are to be seen worn by Patamona, Makusi,

and other men and boys as arm bands (sec. 540). I have seen the former people make them. The needles, about 3 inches long, are in the shape of spills, cut from the midrib of the kokerit leaf, nicked at their thicker ends, and slit from one-fourth to three-eighths of an inch down at the base of the nick (B) to receive the thread when required. With the four needles held between thumb and index finger of left hand, wind onto them, after the manner illustrated in the diagram, the distal end of a cotton strand unwound from a ball, and take care that

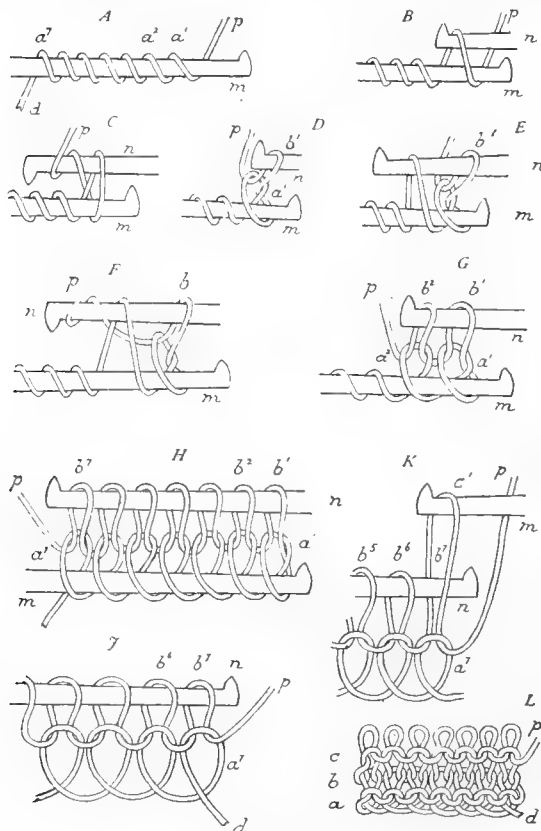
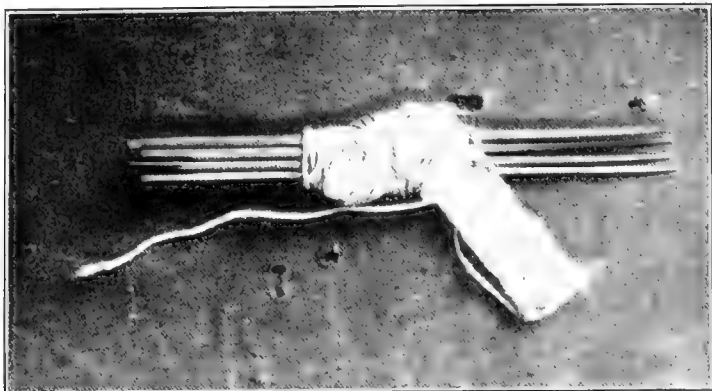
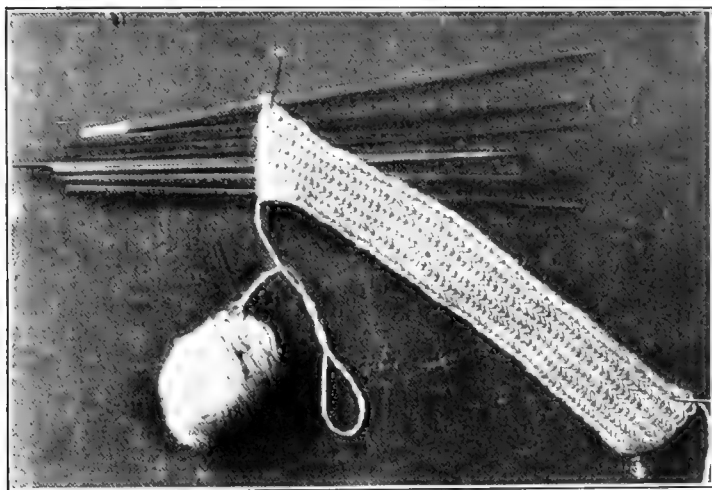


FIG. 22.—Cotton-band making; with two hooked needles.

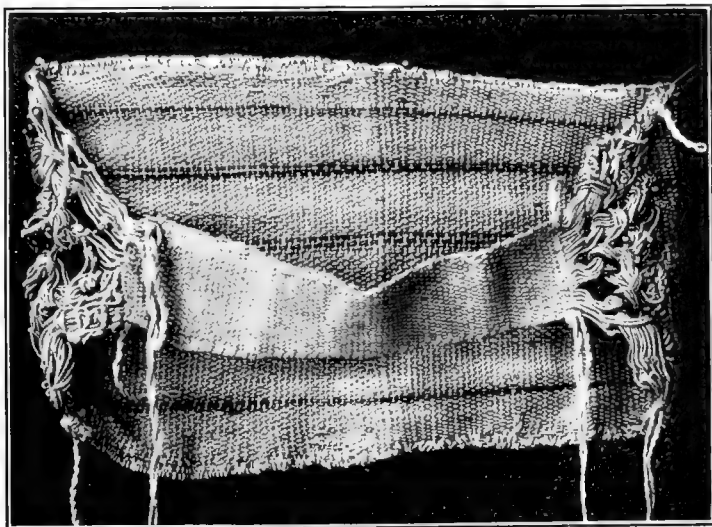
its various positions relative to the respective needles do not become accidentally altered. From left to right, we will number the needles 1 to 4. Pass the cotton over the front of needle 1 and thread it onto 2 (C); push 2 downward, and catching it below the four horizontal rows of strand very tightly with the right thumb and index finger, pull it downward and outward from below. The result of this movement is that the cotton is freed from the needle, and hangs down in a loop (D). Now hold 2 by its "head," and passing its point under the top horizontal strand and through



A



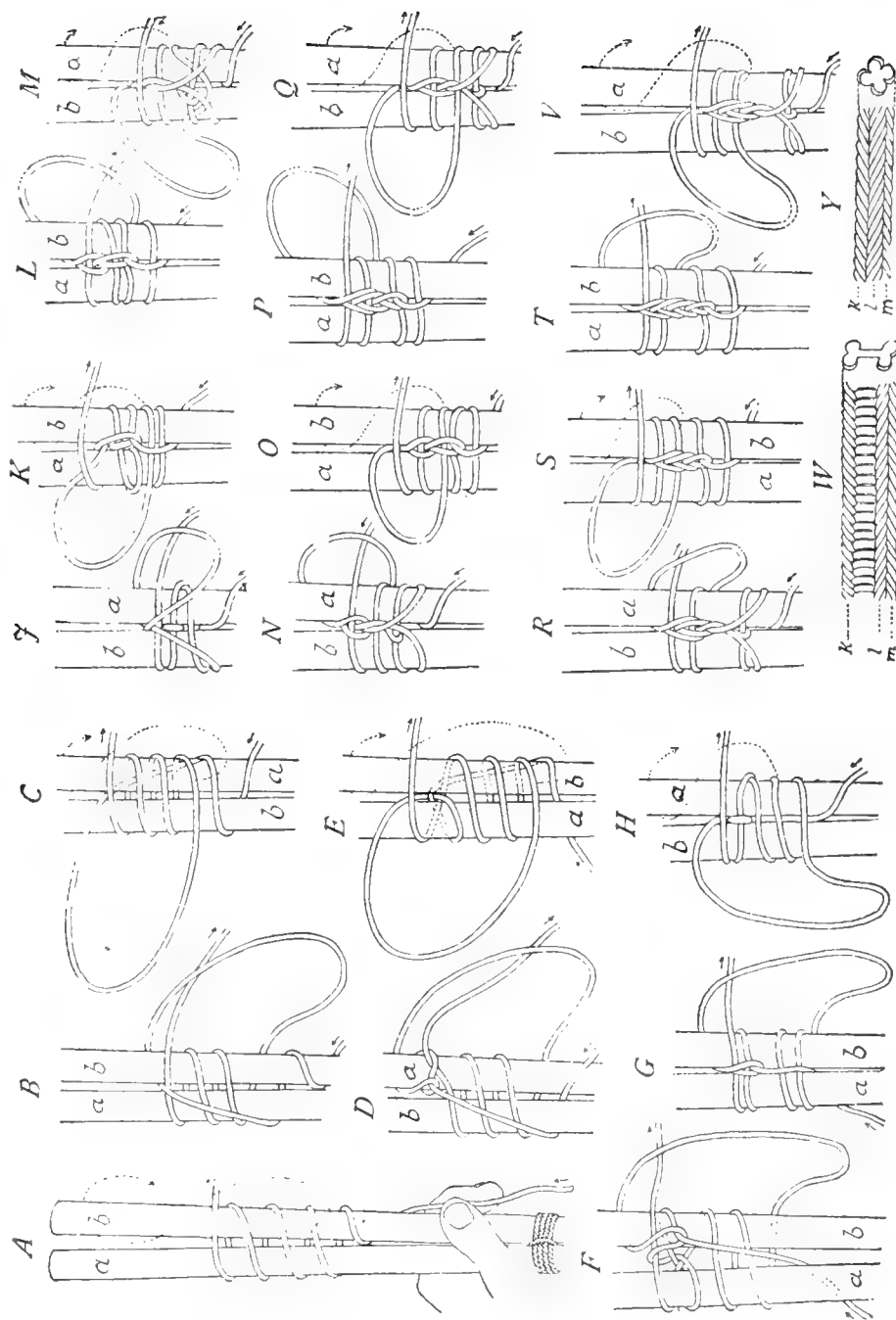
B



C

COTTON BAND MAKING; BABY SLING

A, Cotton band made with four needles. B, Cotton band made with six needles.
C, Baby sling made of two loom-woven cotton bands. Akawai, Pomeroun River.



COTTON BAND MAKING WITH TWO LONG CANES (After Roth.)

the loop, replace it in its original position (E). Next tighten the loop by pulling on the strand (F, G); now thread 4 (H), and manipulate it exactly as has been done with 2 (JK). When this is completed do the same with 3 (L), and finally repeat the process with 1. The whole procedure is again gone through as before, and so the band is gradually formed at the back of all four needles, where, as it becomes longer and longer, it hangs over and behind the left forefinger. To describe the whole manufacture shortly, it is but a repetition over and over again of the following four processes:

- Pass cotton in front of needle 1 and thread needle 2.
- Pass cotton in front of needle 3 and thread needle 4.
- Pass cotton in front of needle 4 and thread needle 3.
- Pass cotton in front of needle 2 and thread needle 1.

52. With six rounded split-eye needles (pl. 10 B).—Similar bands, made with six needles (fig. 23 M), are also found among the Patamona, and, like the preceding, are manufactured both by men and women. A commencement is made with seven horizontal rows of strand and the threading of needle 5 as in the diagram. Shortly described, the whole procedure is a repetition of the following six manipulations:

- Pass cotton in front of needle 6 and thread needle 5.
- Pass cotton in front of needle 4 and thread needle 3.
- Pass cotton in front of needle 2 and thread needle 1.
- Pass cotton in front of needle 1 and thread needle 2.
- Pass cotton in front of needle 3 and thread needle 4.
- Pass cotton in front of needle 5 and thread needle 6.

53. With two long sticks.—Knitting. The Carib and Makusi manufacture a cotton cord

not only for tying around the waist to support the "lap," but also for making a handle to the club (pl. 39, A, B), whereby it is slung onto the wrist. It is made by women. Two lengths (pl. 11 A, *a*, *b*), of the smooth "arrow reed" (the plant used for making arrows from) are loosely tied at one extremity, their other being held vertically between the left thumb and first joint of the forefinger; in the diagram these sticks are represented as much shortened. A piece of cotton from a cotton ball is next

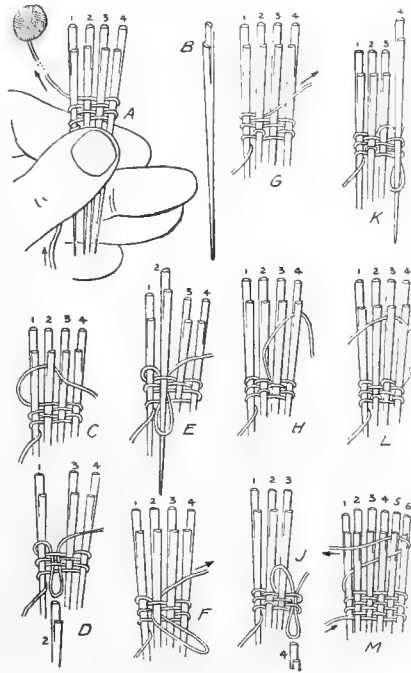


FIG. 23.—Cotton-band making; with four (A-L) and six (M) rounded split-eye needles.

wound five times on the free extremities of the sticks, with the lowermost coil between and the remaining four around them, the free end of the cotton (throughout the process of manufacture) being held taut by the thumb, the other end of the cotton remaining attached to the ball; the ball end of the cotton always remains on the maker's right-hand side. According to whether a thick or thin cord is required, a cotton thread of proportionate diameter is employed. Counting from above down, the fourth coil is now pulled upon so as to form a loop (and the smooth surface of the cane minimizes the friction consequent upon the first three coils being dragged upon), this loop being then passed over one (*n*) of the sticks, so as to hang to the right (B). Both sticks are now turned over in the hand from right to left, so as to reverse their positions, and the loop made to hang on the left (C). Its lowest portion is then picked up and pulled out from under the lowest coil, and the whole then passed over the right-hand stick (D). The sticks are again reversed to their original position (E), the loop made to hang on the left, and its lowest portion similarly picked up and pulled from under the lowest (half) coil, to be passed over the right-hand stick (F, G), over which it falls. The former illustration represents the cotton purposely relaxed for the occasion to show the ins and outs of the procedure, while the latter indicates the process in situ. After reversal, etc. (H), the lowest coil is pulled upon to form another loop, but as this same coil is in direct continuity with the original loop, all it really does is to replace it by another and slightly larger one, which is similarly passed over the right-hand stick (J). Again reversing and with loop on left (K), the lowest portion of the latter is picked up, pulled out, and passed over the right stick (L). And so the process is repeated by successively reversing, pulling on lowest portion of loop, and passing over the right-hand stick (M, N); again (O, P); again (Q, R); again (S, T); again (V), and so on until the desired length is obtained, when the cord is bodily slipped off the free ends of the sticks. On its removal the cord will be observed to be more or less like a dumb-bell in section (W), the flattened "handle" having been produced by the horizontal portions of the cotton strand passed between the sticks. The whole is finally put upon the stretch, a position in which it will be found to remain (Y), the section of the cord now showing a quatrefoil. The extremities have finally to be tied, the stitch not being a "lock" (WER, III).

54. Around a single stick.—A somewhat rare tubular cotton belt, of which two specimens are in the Georgetown Museum (fig. 24), was formerly made by Arekuna. It is constructed on apparently identical lines as the kamwarri belt (sec. 544) around a wooden pencil, but of many more loops, the number in one of the above examples being 15. After removal from the stick it is stuffed with

silk grass, the initial and final series of loops being threaded onto the tying strings.

55. With a loom.—Band weaving on a loom, though in a primitive fashion, is found among the Arawak, Carib, and Warrau. It is a process adopted in the manufacture of certain cotton anklets, forehead and waist bands, baby slings (pl. 10 C), etc., and may possibly represent an old-time method of hammock weaving (sec. 476). A loom or framework is made by driving two thin sticks vertically into the ground and tying crosspieces onto them above and below (pl. 12 A). A length of cotton is next tied over the crosspieces and knotted (*k*), the remainder being wound over and over again until

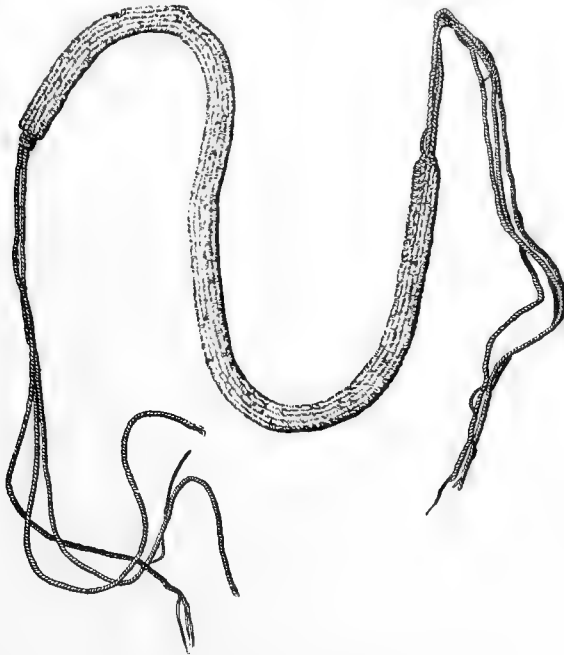
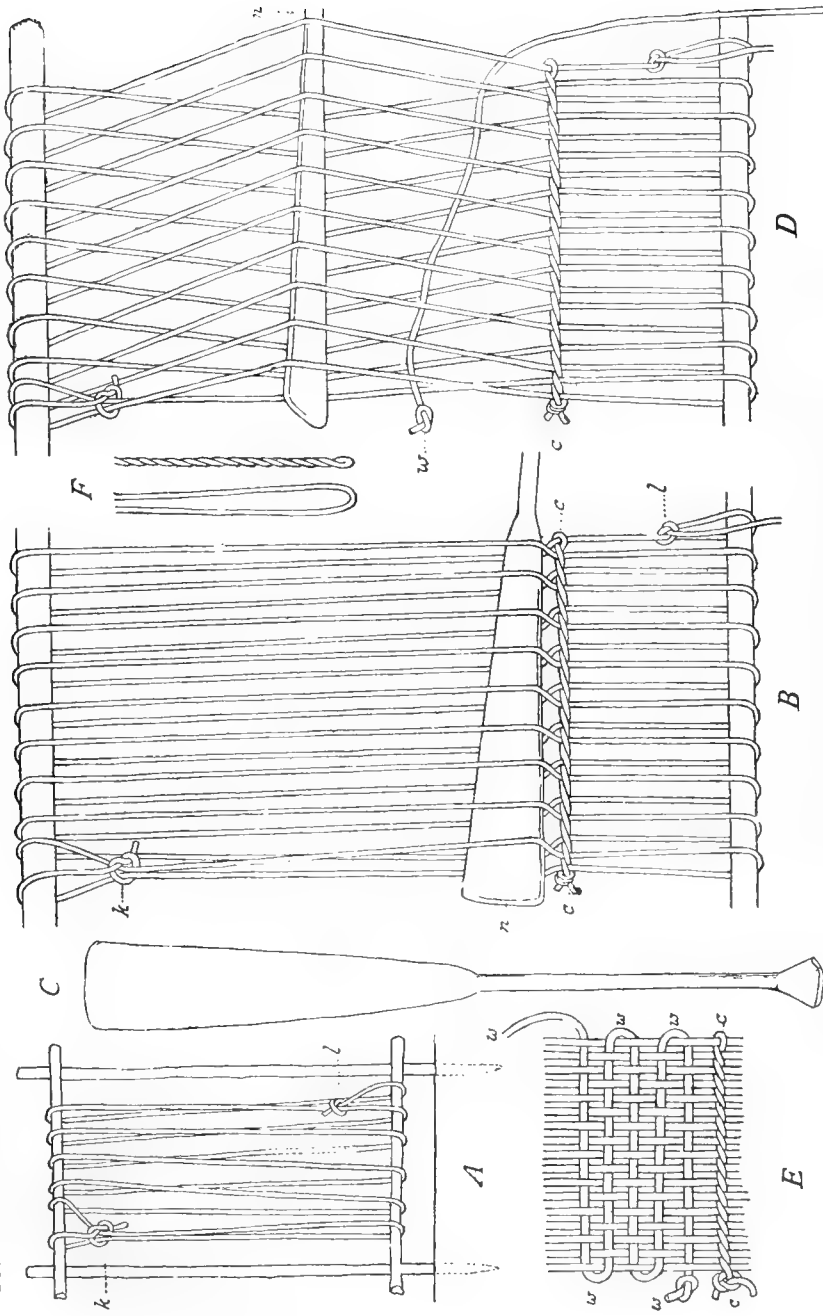


FIG. 24.—Tubular cotton belt. (Georgetown Museum.)

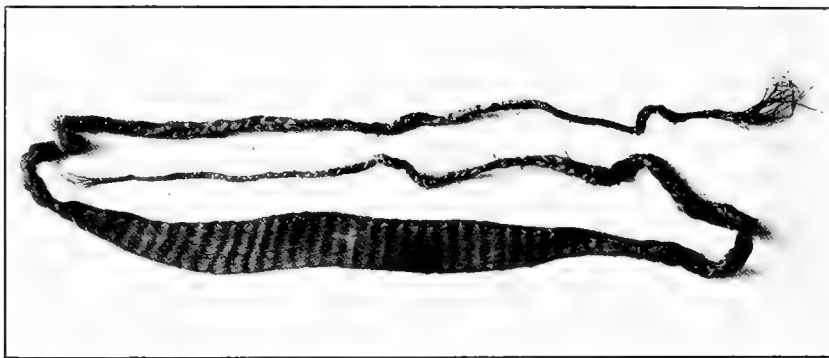
it is finally fixed (*l*). As these lengths ultimately constitute the warp of the completed article, the number of loops into which the cotton is wound round will vary with the width of article required. The constituents of each loop, front and back, are next approximated and linked by means of a separate thread (*c*) fixed after the manner of a chain twist, the two ends of which are tied on one side (*B*). The "presser" or "beater" (*C*) is now passed through from right to left under and over each alternate string, firmly pressed and rammed down on its edge (*B, n*), so as to render the chain twist taut, even, and straight. [This presser, about 8 or 9 inches long, is very like a miniature paddle, and is actually so called by the

Arawak—viz, *nahalehi toburiko-kwanna*, i. e., paddle; to knock, hit, etc.] It is next raised a little distance and turned on the flat so as to enlarge the front-to-back interspace between the warp constituents (D), thus rendering the insertion of the first stretch of weft (*w*) from left to right a comparatively easy matter. The beater is now turned on its edge again, pressed and rammed down onto the weft, and drawn aside, only to be reinserted into the warp in and out alternately among the strings, but with this difference, that those threads which were all in front of it before are now behind. After pressure, etc., with its edge down, the presser is again raised and turned on the flat, so as to enable the second line of weft to be formed by inserting it in between from right to left, and then ramming down as before. The process is thus repeated again and again by inserting the weft from alternate sides (E) along the passage made for it by the beater between the constituents of the warp, until such time as the requisite length of band is obtained, when the weft is finally tied onto one edge of the warp. Removed from the crosspieces, each of the loops at top and bottom (i. e., through which the crosspieces passed) is rolled separately into a tassel (F). A short length of band thus "finished off" may be used as an anklet, being secured to the limb by tying the two series of tassels together; it is worn by both men and women, the former, however, using narrower ones (sec. 552). Waist bands (sec. 548) are made on a similar plan, but of course with a much longer framework (WER, III). Instead of making the cotton band with a weft passing under and over a single warp, it may pass under and over two at a time, as in the cotton fillets of the hats of the Makusi and other tribes (sec. 518).

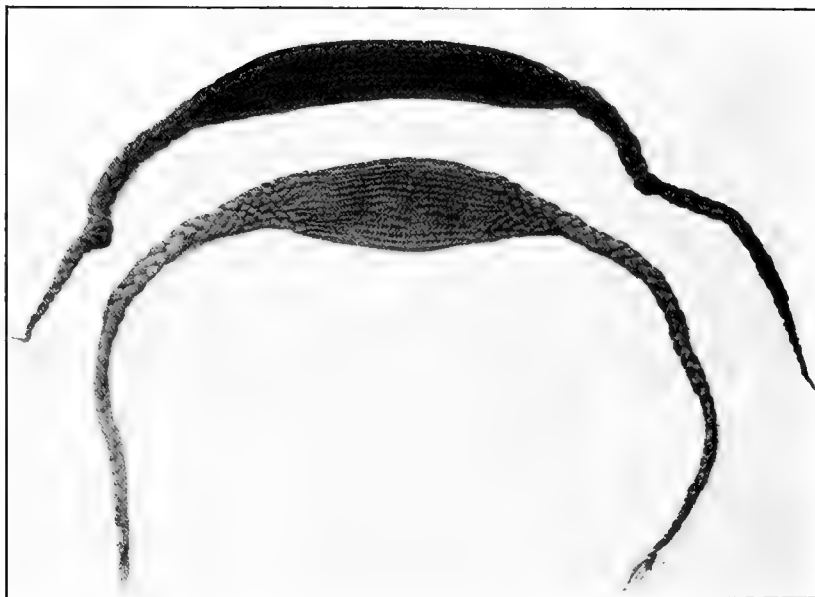
56. A somewhat peculiar kind of cotton work, for which I know of no adequate term, has been met in the manufacture of certain baby slings (Ch. XX) and some fringed apron belts (sec. 548; pl. 154 B; fig. 231). In the former case I have supplied and figured the necessary details of the process which for the present I am describing as "looping on a frame," or "frame looping."



COTTON BAND MAKING ON A MINIATURE LOOM (After Roth.)



A



B

SHOULDER STRAPS OR BANDS

A, Wapishana. B, Makusi.

CHAPTER IV

TWINE, CORDS, AND BANDS: OTHER THAN COTTON

Mauritia (ite) twine (57): Sarau (58) and uses (59); sensoro and uses (60); knapsack straps (61, 62); bina strings (63).

Bromelia (silk grass, kuraua) twine (64): Use for fishlines (65-69); employed with needle (70); three-yarn hammock ropes (71).

Astrocaryum and remaining twines, etc.: Attalea funifera, Leopoldina piassaba, Carludovica, etc. (72).

57. Mauritia, ite (æta) twine.—The young unopened leaf of the *Mauritia flexuosa* palm, the ite of the Creole, Arawak, etc., is cut away

from the tree, skaken out, and opened, and the distal extremity of each segment treated as follows: While the segment is firmly secured in position with the left hand, its extreme tip is bent between the right thumb and forefinger, the portion of blade immediately below being doubled upon itself and gripped between the same thumb and middle finger (fig. 25 A). During the course of a comparatively slow movement which the right hand now makes toward the operator it glides over the doubled portion of segment, but at the same time squeezes it so tightly as to produce a kink on both its surfaces. It is owing to this kink that the cortex can now be seized, and once seized, stripped to its base, both front and back, where it remains until all the remaining segments have been similarly treated. These cortical strips, now known as tibishiri (Arawak) are finally all removed and either soaked in water for a week or boiled for half an hour or so and washed; they are next sundried for a week or ten days, those obtained from one leaf being usually tied up at one end together into

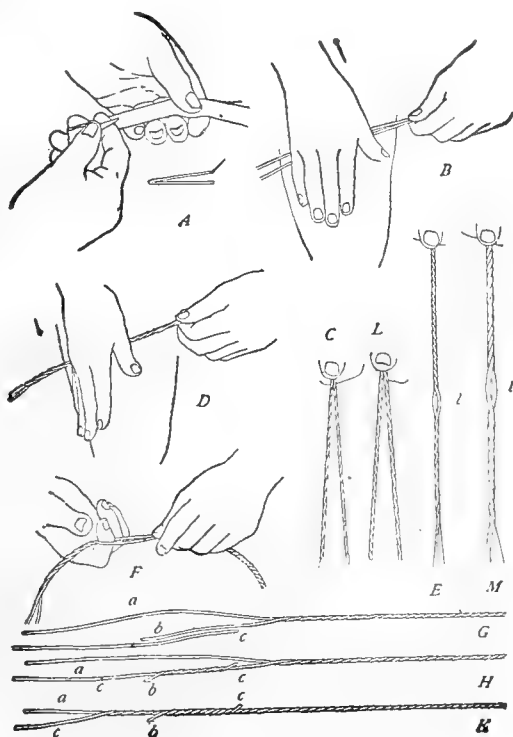


FIG. 25.—Manufacture of ite (mauritia) twine.

duce a kink on both its surfaces. It is owing to this kink that the cortex can now be seized, and once seized, stripped to its base, both front and back, where it remains until all the remaining segments have been similarly treated. These cortical strips, now known as tibishiri (Arawak) are finally all removed and either soaked in water for a week or boiled for half an hour or so and washed; they are next sundried for a week or ten days, those obtained from one leaf being usually tied up at one end together into

a knot. The length of such a strip will be from 26 to 30 inches. This stripping of the tibishiri and its manufacture into twine is essentially woman's work. According to the size of thread required, each strip can be used split (by means of the thumb nail), and again split to make a very fine twine, or employed whole. According to the method of manufacture, the thread, when completed, is known as sarau or sensoro (Arawak).

58. To make the sarau, two strips, held at one extremity between the left forefinger and thumb (B), rest upon the naked (right) thigh, where, with the flat of the (right) palm, they are rolled along the middle third of the thigh, once upward, toward the hip, at the same time that the left hand, pulling outward, keeps them stretched. During the course of this movement, wherein the pressure is exerted principally from the ball of the little finger and corresponding half of the palm, it must be remembered that though these may override, each strip is rolled separately in a spiral or twist, the direction of which may be described (C) as being from right to left (regarding it with its axis vertical). Without removing the right hand, so as to prevent the strips untwisting, but only shifting the pressure toward the outer edge of the palm, both strips are then rolled together along the outer third of the thigh, once downward toward the knee (D). The result is that the portion intervening between the two hands, constituting now the manufactured twine, will of course be found twisted from left to right, while the free ends hanging over the thigh beyond the right hand will be recognized as having twisted themselves together from right to left (E), the separation and fixation of these two opposite spirals taking place at the "lock" (I) where the main pressure of the palm edge was exerted.¹ The right-to-left spiral formed by the free ends, due to the original and separate rolling of each component in that direction, is now opened by inserting the right forefinger into the lock and pulling outward (F); the left-to-right spiral in the piece of completed twine retains its direction owing to that of its constituents being both of them in the opposite direction. The whole process of rolling up and down is again and again repeated until a distance of about 5 or 6 inches from their extremities is reached, when a new strip (G, c) is rolled into and with the shorter (b) of the two original, this compound one (H, b, c) and the single original (a) being together rolled, in the manner above described, into another short length of twine (K) until the ends of two strips only (that of the newly introduced and that of the original) again remain free; another strip is next rolled in with the now very much shorter single original one, and both compound ones twisted up again. It is a case of rolling only two at a time. A twine can thus be manufactured bit by bit into any length required (WER, III).

¹ The reader is requested to observe that, for clearness' sake, the original twist of each ply, indicated in C, is not shown in E. For the same reason the original twist of each ply in L is not indicated in M.

59. The sarau is used for making the "bar" variety of hammock (sec. 463), and for the constituents of the scale lines (sec. 480). In the latter case the fiber is rolled more coarsely and a three-ply made instead of a two-ply. The method and procedure are identical, though on a larger scale, of course, with what is to be observed in the manufacture of the huri-arang variety of kuraua twine (sec. 69).

60. The sensoro is made on an exactly reverse plan to the ordinary two-ply sarau, each strip (fig. 25 L) being rolled separately down the middle third of the thigh, and then together up (M), with the addition that, owing, it is stated, to the increased thickness of twine resulting from the two strips being generally used unsplit, the rolling in either direction is repeated two, three, or more times. To prevent the two strips becoming untwisted on completion of each successive roll in the same direction they are deftly picked up between the right thumb and forefinger before the pressure exerted by the palm on their distal ends is removed and so placed in suitable position ready for the next roll. The completed sensoro thread can always be distinguished from the two-ply sarau by its twist being a right-to-left one. It is employed for making the purse-net (sec. 477) hammock (WER, III).

61. The strap or band (pl. 13 A) used by the Wapishana with their shoulder basket is made from the ite on the following lines: After removal of the shreds (outer cuticle) from the leaf by the process already described (sec. 57) they are rolled down the thigh (but not made into twine) and inserted, at about 7 or 8 inches from their bases, either into a stick split down about three-quarters of its length and tightly tied at its open end, or in between two sticks similarly fixed at their extremities (fig. 26 A). In either case the insertion of each shred is alternate, one being passed from above and its neighbor from below. There thus arises a double layer of shreds—an upper (*a*) and a lower bundle (*b*)—each of which is loosely knotted at its distal extremity with the idea of keeping all its constituents free from entanglement. The free basal ends are of no concern to us for the present. A comparatively long length of ite twine is now laid at its middle, parallel with the sticks, in between the two layers (B), which are next crossed over it, the crossing being effected by passing each

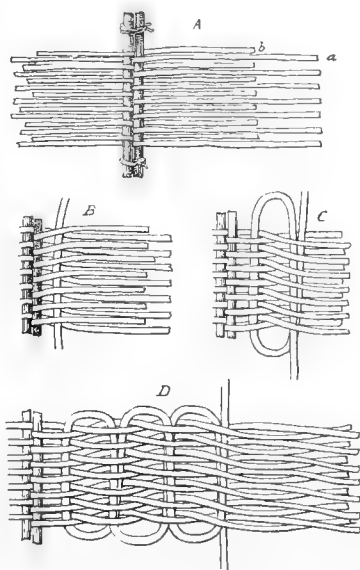


FIG. 26.—Manufacture of Wapishana shoulder strap or band.

unit of the one series in between an interspace of the other, with the result that, what just previous to the crossing was the upper layer is now the lower, and vice versa (C). The two ends of the fiber twine are next pulled through from opposite sides, the crossing of the two layers repeated, the twine again pulled through, and so on, until a sufficient length of band shall have been completed (D). Starting from the stick end, each double loop of twine is tightened in turn by pulling upon it at the sides, as with a shoe lace, for instance, and their ends finally tied. After removal from between the sticks, the extremities of the shreds are rolled up with additional threads and plaited.

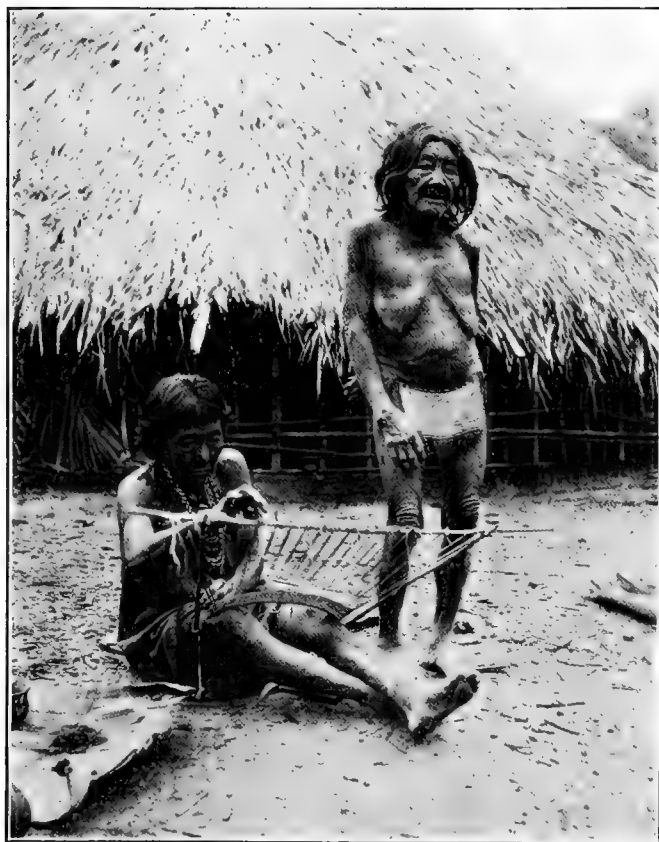
62. Another form of strap, also of mauritia twine, met with among the Makusi, is of similar construction as regards the split stick, etc., but differs in the absence of a cross twine, the two layers of shreds, starting at the central sticks, being plaited into one another (pl. 13 B).

63. Bina strings (WER, VI, 277) of mauritia fiber are always used in pairs, a short, thin, and a comparatively long, thick, tapering one. The latter is soaked in the particular bina required, placed in a small calabash cup, and left there all night. In addition to the bina it may have various ants, bee stings, etc., stuck here and there into its meshes. In the early morning the shorter string is passed up one or the other nostril, and by means of the forefinger hooked out from the back of the throat through the mouth, one end being left hanging out of the nostril (pl. 14 A). The end passing out of the mouth is now securely tied to the fine tapering extremity of the thicker cord, which is next pulled through the mouth, back of the throat, and so out again at the nostril. The following extract from my field note book (June 20, 1914) may prove of interest here: "Robert, at the Makusi village of Maripai, uses a certain bright green arboreal frog, known as kopé, for a bina. When fresh, he rubs the slimy material from off the animal's back onto his chest, which he has especially incised for the purpose. When smoke dried, he soaks it in water contained in a little gourbi (calabash cup), and after moistening the bina string with the same water, pulls it through his nose," as indicated above.

64. "Silk grass," kuraua, twine.—The manufacture of the *Bromelia* or silk grass, the pita of the Orinoco, the kuraua of the Creoles, etc., is effected as follows (fig. 27 A): A leaf (*l*) is fixed in a loop cord (*c*) attached to a strong crossbeam, the loop being at about the same distance from the ground as the operator's head. The leaf itself is suspended, not at its middle, but with its thicker basal (proximal) end the longer. Its distal extremity is next attached under and over (*B*) onto a stiff round stick (*s*) and gripped in position between the right fore and middle fingers, and between both hands. A sharp pull downward is made. This tears about 6 or 7 inches of outer cortex from off the inner fibrous structures around which the torn shreds hang and below which the proximal portion of the leaf remains free (*C*). This



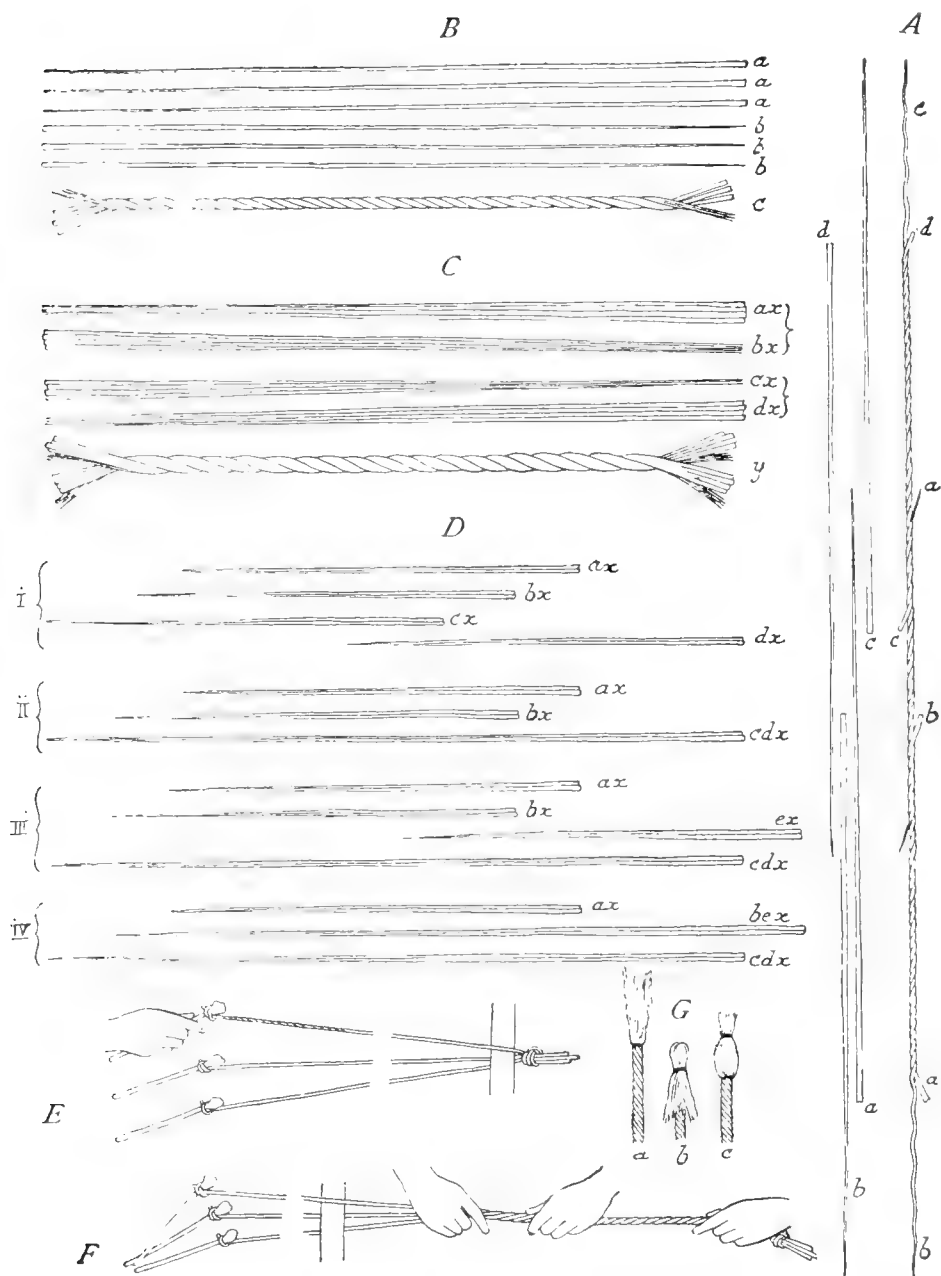
A, Bina string being pulled through the nostril.



B, Making a bead apron.

BINA STRING; BEAD APRON MAKING

(Photographs by Messrs. Liljewatsch and Thulin.)



THE MANUFACTURE OF KURAU TWINE FOR FISHING LINES,
SCALE LINES, ETC. (After Roth.)

latter extremity after being pulled down a bit is next turned upward so as to form a sort of sheath for the fibers already freed (D) and is steadily but firmly pulled off and cast aside. This pulling off is a somewhat tricky business, the art being to close the upturned sheath above with the left thumb and forefinger so as to prevent the fibrous core from slipping out (E) and to clench it below between the corresponding digits of the right; the purpose of the remaining fingers is rather to guide and steady the sheath during the pull exerted by both hands. The exposed fibers remaining suspended are next picked and cleaned of any *débris*. The distal end of the leaf is again similarly fixed over the cross stick and pulled, with the result that the whole proximal extremity of the leaf is dragged through the loop, whence it emerges entirely cleared of its outer cortex. The leaf, such as is left of it, is again fixed on the loop, and its proximal fibers together wound over the cross stick, in exactly similar fashion as the distal extremity originally was: by pulling sharply downward, the cross stick drags away in their entirety the fibers now cleared of all cortical substance. This forcible pulling out of the kuraua fiber is man's work, the strength required for cleaning the cortex from off the proximal extremity being too

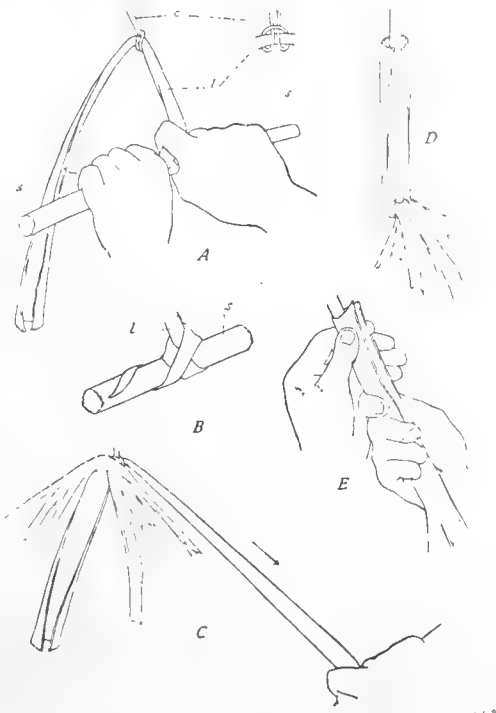


FIG. 27.—Manufacture of kuraua (*Bromelia*) twine.

much for the women. In the absence of a son or other assistant, a wife may help by looping three or four leaves in a row ready for her husband to pull, and may perhaps complete his work by dragging off the distal portions which require far less vigor in their manipulation. Of course here and there are to be found some women who are physically capable of carrying out the complete pulling process by themselves, but always on the lines above described, i. e., commencing with the cleaning of the proximal extremity of the leaf (WER, III).

65. Kuraua twine is utilized for fishlines, hammocks (ARW, 208), bow strings, scale lines, and hammock ropes. The methods of

manufacture will vary with the purposes for which it is ultimately intended. With the Pomeroon Arawak, the operator has to be informed of the name of the particular kind required, the different names of the completed article depending for the most part upon the particular fish which, when used as a line, it will be employed in catching. These are the hokoro, imiri, korasso, huri, etc., not all of which I have so far had opportunities of getting identified, the twine being indicated by this name and the suffix -aring. The variations in technique are mainly due to the proximal ends of the fiber shreds being so much greater, comparatively speaking, than the distal, and it is to obviate this inequality that the methods about to be described are employed. As a preliminary it may be noted that all these twines are formed by a down-and-up rolling on the thigh, leg, or even the breast (ARW, 208), which gives rise to a right-to-left spiral.

66. The hokoro-aring (pl. 15 A) is the finest of all the kuraua twines, being made up of a thickness of two fiber shreds. These (*a, b*) are placed side by side but with their opposite ends together so as to insure uniform thickness throughout. The rolling upon the thigh—once down and once up—is commenced at about the outer third of either extremity, and the shorter end completed into twine. The reason for not making a commencement with the rolling at the actual extremity is that the movements here with a thick and a thin fiber would not be regular. The portion of completed twine next changes hands, and the rolling is started again from the point of commencement so as to complete the remainder; when the extremity is approached two new fiber shreds (*c, d*) are successively rolled into it (as described in the case of the ite), but care has to be taken that as each is inserted the distal and proximal ends of the two original fiber shreds are connected with the new proximal and distal ones, respectively. When completed, the line will thus be just about double the length of a fiber shred. The oradiro-aring is manufactured in identical manner, and only differs from it in that it is about three times as long.

67. The next thicker kuraua twine is the imiri-aring (B). A loose strand is made of two, three, or four fiber shreds (*a, a, a*), similar ends together, and rolled as a whole a few times down and up, so as to give comparative cohesion. Another loose strand, of an identical number of shreds (*b, b, b*), is similarly manufactured, and laid upon the previous one, but with opposite ends together. Commencing with the center of the two superimposed strands, they are now rolled into twine, the usual once-down and once-up movement being continued until the extremity is reached. This done, the whole is turned round, rolling recommenced at the middle, and the other half made into twine. The completed article (*c*) is thus limited to the length of one fiber shred.

68. The korasso-aring (C), used for spring hooks as well as for lines, is made of four bundles (*ax, bx, cx, dx*) of fiber shreds, each

bundle with similar ends together, and each containing, as far as the operator can judge, an equal number of shreds, anywhere from about 12 to as many as 24. The proximal end of one bundle (ax) is just sufficiently rolled into a corresponding length of the distal extremity of a second (bx) as to make one very loose strand of them—the length of a fiber shred. A similar procedure is carried out with the third and fourth (cx , dx). The two resulting strands are next placed side by side together, and the thigh rolling commenced at their center—once down and once up. When the twine on one side is finished, the whole is turned round, rolling recommenced at the starting point, and the other half completed. The finished article (y) is thus the length of one fiber shred.

69. Unlike all the preceding kuraua twines, the huri-aring is formed by the rolling together of three bundles of fibers. It is made not only for catching that particular fish, but certain others, its manufacture varying only in the length employed. Thus, while the huri-aring measures at most 2 fathoms, the oradiro-, the warburi-, and the lukunanni-aring run up to something like 4, while the wirokotori-aring will measure from 20 to 24. So also hammock scale lines which are made in an identical manner will reach this extreme length and, if necessary, can eventually be manufactured into a hammock rope. A bowstring is another article built up on the same lines as the huri-aring. As a matter of fact, the method of manufacture of the huri-aring demonstrates how increased length and uniform thickness can be simultaneously obtained (D): Several bundles of kuraua (ax , bx , cx , etc.) are arranged so that each will contain about an equal number—say, 12—fiber shreds, all arranged, of course, with similar ends together. With three bundles (ax , bx , cx), which are placed one slightly in advance of the other, a start is made at about 6 inches from their thinner extremity, where all three are rolled into one, once down and once up, and this shorter end of the twine completed first. Taken off and reversed on the thigh, the longer end is commenced to be rolled at the starting point, and when about halfway to completion, the distal (thin) extremity of a fourth bundle (dx) is rolled into the hindmost one (cx) of the original three (cdx), which are then again all rolled together (I, II). After a while the distal (thin) end of a fifth bundle (ex) is rolled into the second (bx) of the original three (bex), and all three again rolled together (III, IV). Later, the distal extremity of a sixth bundle is similarly joined into the third of the original three, the whole again rolled, and so the process is repeated by inserting the thin extremity of a new bundle successively into the thick extremity of the hindmost bundle exposed. Experience alone seems to teach the operator when the varying thickness of the resulting twine renders it opportune to insert a new bundle (WER, III).

70. The Uaupes River Indians employ true needles—that is, ones with eyes—made of monkey bone, for sewing together the component

parts of the bark dresses used in their mask dances (KG, I, 117; II, 169). They are threaded with kuraua fiber.

71. It was stated in a previous paragraph (sec. 69) that kuraua scale lines can eventually be made into a hammock rope (pl. 15 E). Three scale lines are required for the purpose. At one extremity they are each tied to a knobbed wooden handle; at the other, after being passed around a strong post set vertically in the ground, they are tied together. The handles, some 7 or 8 inches long, with their lines taut, are each rolled simultaneously in a right-to-left spiral (similar to the sensoro of the ite). Still keeping up the stretch, the three handles are transferred to the charge of one assistant, while another pulls the tied ends beyond the post and twists them in an opposite direction—a left-to-right spiral (like the sarau). Starting from the tied extremity, and with the tension still maintained, the third operator (F) then guides the three scale lines (already tending to roll into one another in a left-to-right spiral owing to the torsion to which they have been severally and separately subjected) into their respective relatively proper courses to form the three-yarn hammock rope. The extremity of such a rope (G) is “finished off” by tying tight, and then loosening all the free ends of the strands (a), which are now bent backward and tied again lower down (b), to be subsequently turned up again and finally tied a third time above (c).

72. Of remaining twines, etc., there are the tucum and yauary (awarra), very lasting threads for hammock weaving, fish netting, etc., both obtained from species of *Astrocaryum*, a “pimpler” palm. Unfortunately I have never seen the process of manufacture. At São Gabriel, on the Rio Negro, Schomburgk speaks of the men making cordage or piassaba from the fibers of the *Attalea funifera* (ScQ, 255). Humboldt alludes to the *Leopoldina piassaba* under the Venezuelan name of chiqui-chiqui. The whole stem is covered with a thick coating of fibers, hanging down like coarse hair, and growing from the bases of the leaves which remain attached to the stem. It is used for cables and small ropes for canoes and larger vessels on the Amazon (ARW, 167). Finally, there are many bush-ropes, nibbi, or sippi—*e. g.*, *Carludovica* (the mamuri of the Creoles, muna of the Makusi) which may be used as twine in their natural condition. The lower ends of this vine, being less knotty, are the portions used. Its collection, however, is not without risk, because as the Indian sharply jerks and pulls it down from off its entwined tree, he immediately has to skip out of the way to avoid the broken timbers, twigs, and ants' nests that often accompany its fall. Mamuri can be likewise employed split for basketwork. The same may be said of the kamwarri vine (*Desmoncus* sp.), which is cut to the length required and the pimpler at each joint, together with the outer cortex, scraped off with a knife (sec. 104).

CHAPTER V

BEADS AND BEADWORK

Varieties of beads: Fish-tooth (73); shell (74); seed (75); quartz, stone, glass (76).
Methods of threading beads (77).

Manufacture of the bead apron (78).

73. Beads of fishes' teeth were noted both by Bolingbroke (Bol, 145) and by Bancroft. The latter says they [the Carib] likewise form the teeth of fish into small cylinders, which they perforate with a hole from end to end, and then cut the cylinder into short pieces, thus making white, smooth, shining beads which are strung and worn for ornament (BA, 257).

74. Shell beads were manufactured by the Carib Islanders. They were made of small pieces of the lembies [or lambis, the large shells used as signal horns, etc.], which they rub on stones until they become round and about two lines in diameter and half a line in thickness, in a necklace of ordinary size; . . . and they could not make one piece to perfection and pierce it with the tools that they use in less than three days . . . There are three to four thousand of these pieces in a necklace (PBR, 233). Among the Makusi I came across small marine shells threaded in their entirety into necklaces. In Cayenne beads were made from river shell, or species of *Burgos* ground on sandstone into rings (*cercles*) (PBA, 194) or cones¹ (*figure d'une quille*) (PBA, 196), and, along our own borders, the Arekuna also often wear armlets of threaded pieces of shell (EU, 291). Unfortunately, in both cases, the nature of the shell, whether land or marine, is not specified. The Caberre and many Carib women on the Orinoco manufactured necklaces, armlets, etc., from beads made of snail shell (G, I, 125). In none of these cases is there any record of the method by which the perforation was effected. In the Makusi, etc., bell or cone ornament of the lower lip (sec. 503) and the disklike decoration of the forearm (sec. 540), which may be regarded as elongate and flattened beads, respectively, a natural perforation already exists in the mammillary protuberance of the shell from which they are cut.

75. I have seen dozens of different kinds of seeds, seed capsules, etc., threaded for necklaces, etc., but their scientific identification has not been possible so far. Crévaux has described the method of drilling chips from the seed envelope of the *Omphalea* into beads (sec. 19).

¹ From analogy with the shape of certain shell beads met with among the Carib stock of Indians, and in Cayenne, I am purposely translating the word *quille* as a cone, instead of as a skittle.

76. Beads of quartz (sec. 537), greenstone (WER, VI, 241), and similar material (sec. 505) are not unknown (pl. 16, fig. 2), and the artificial piercing of the first mentioned has been recorded (sec. 20). Throughout the Guianas, glass beads are employed in the construction of aprons, where the method of threading them is peculiar (pl. 18 A, B). They are strung on two horizontally placed weft threads (cotton or silk grass) between which vertical warps pass, with the result that the web is kept compact, and has the same appearance in front as behind (secs. 78, 549).

77. In other cases—e. g., threading beads for necklaces, armlets, and other similar articles (pl. 16, fig. 1)—the units may be hung directly on the supporting string (A) or threaded on separate loops (B) or on a continuous one, the latter varying according to whether the two components of each pass singly (C) or together (D) through the supporting band. This band may consist of from 4 to 6, 8 (E), 10 or more strands, and is worked, so far as the insertion of the loops is concerned, on the same lines as the 4-strand top crosstie of the bead apron to be now described.

78. The technique of a bead apron as made by an Akawai (its construction is similar throughout the tribes) would be as follows:

The frame (pl. 17 A) is built of a bent switch (*a*) tied an inch or two above its ends to a straight crosspiece (*b*). A length of medium-sized cotton twine is attached to the upper portion of the switch and passing twice backward and forward gives a tie (*c*) formed of four strands. Owing to the bend in the switch, broader below than above, the tighter this tie is pulled in the subsequent manipulation the more firmly will its extremities be drawn into position. Another strand of cotton (B, *d*), still attached to its ball (*e*), is now fixed to the right extremity of the tie and plaited into it like this: While the right forefinger (*f*) raises the two middle strands (*g*, *h*) of the four constituting the tie, the left hand holding the ball of cotton unwinds from off it a length sufficient to form a loop reaching about 3 inches below the crosspiece. The left hand, holding this loop in its palm, passes the ball between the middle and outer strands of the tie, for which space is made by the right forefinger. The latter is now withdrawn and reinserted (C) so as to raise the two outer strands (K, *l*) of the tie and the cotton ball passed back again to form another loop of similar length as before and, like it, held in the left hand. The process is thus repeated and loop after loop formed until the left-hand extremity of the tie is reached. The combined result of this method of inserting, releasing, and reinserting the right forefinger is to form two chain twists out of the original tie, and these constitute the upper limits of the apron to be manufactured. The loops above described ultimately form the warp and are dealt with (D) as follows: The last three loops (*m*) at either end of

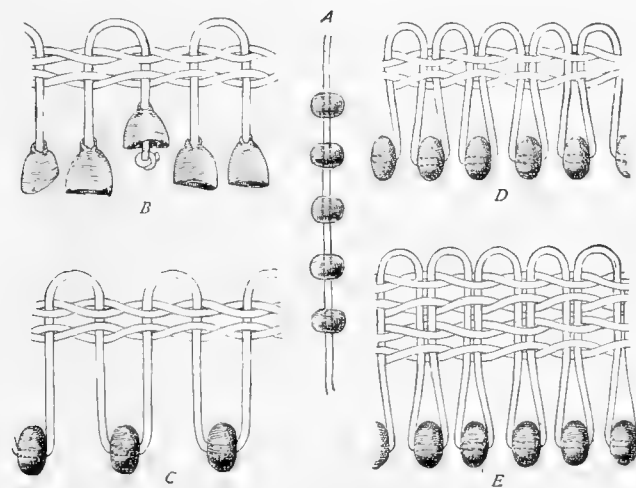


FIG. 1.—METHODS OF THREADING BEADS

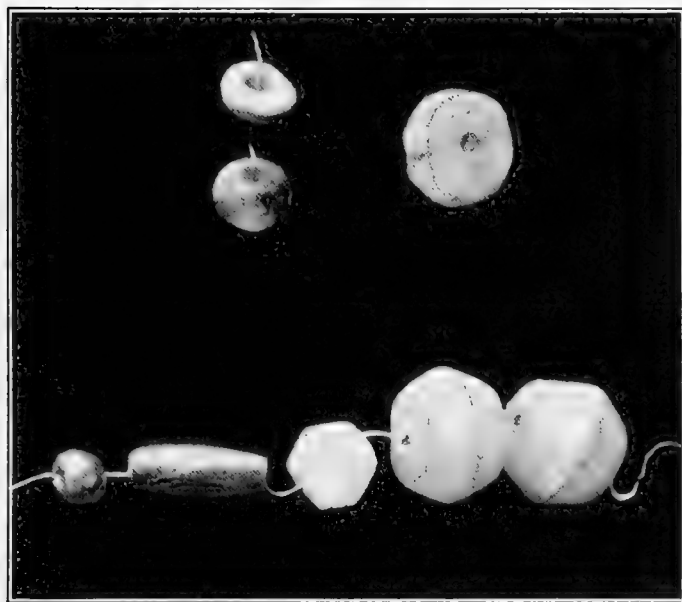
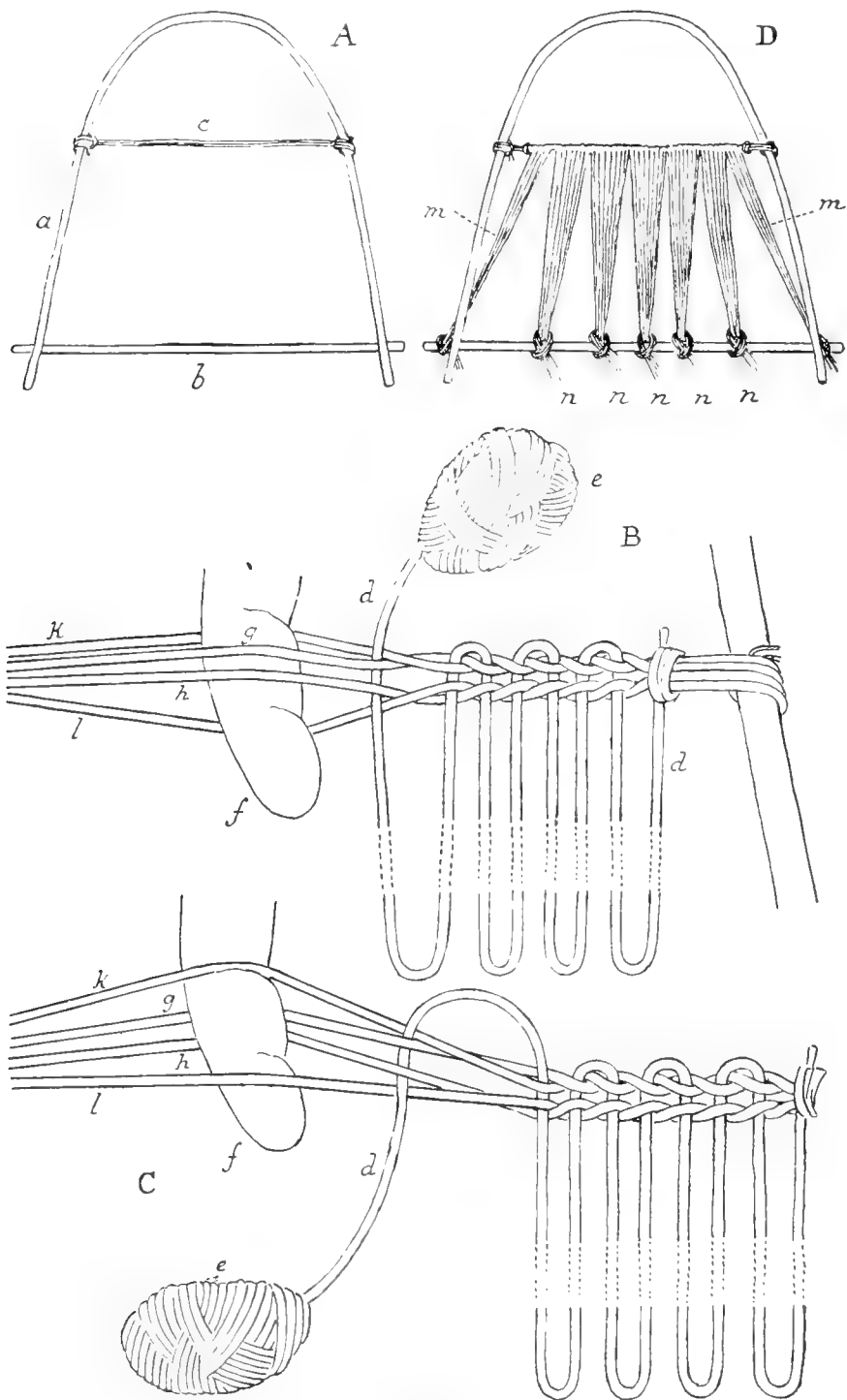


FIG. 2.—OLD-TIME QUARTZ AND STONE BEADS
(Georgetown Museum.)



THE GLASS BEAD APRON. MAKING THE TOP CROSSTIE AND WARPS

the tie are firmly knotted in one bundle either to or outside of the junction of switch and crosspiece and will finally constitute the lateral limits of the apron. The intervening loops are cut at their extremities and their constituents (*n*) in bundles of 8, 9, 10, or so, loosely looped onto the crosspiece. In the meantime (pl. 18 A) the weft *o* has been prepared. This consists of two strands of very fine cotton of a length sufficient to complete the article of dress. Some 3 or 4 feet of this two-strand cotton is threaded at a time with the beads, the remainder being rolled into a miniature hank or skein. The bead end of the weft is fixed to the tie and is then passed through the upper ends of the first three loops—that is, those of the outermost uncut bundle (*m*)—leaving a couple of beads between each. The next bundle is now unlooped from the stick and its constituents separately and in rotation passed through the two strands between every two beads—that is, instead of the weft strands being passed in and out between the warps the reverse process takes place. The warp strands having been thus dealt with and the weft tightened and pressed to its uppermost limits, their ends are again loosely looped onto the crosspiece and the next bundle dealt with in similar fashion. When the last bundle is reached, it is treated as the first one—namely, the weft is passed through the three loops and a couple of beads left between each. Turning over the frame now, work is recommenced from right to left, but previous to the insertion of the weft into the first three loops the two halves of each loop are twisted to prevent the first row of weft from slipping down out of place. Otherwise the process is identical, care being taken when the last bundle of three loops is reached that a similar twist is made as before. The frame is again turned over, work recommenced from right to left, and thus row after row formed until the required depth is obtained (B) (pls. 14 B; 18 C). To obtain the correct shape peculiar to this apron (a width greater below than above) one of two or sometimes both measures are resorted to—an increase in the number of beads intervening between the warp strings or the attachment here and there of another strand to a warp, so as to make two of it.

The manufacture of a bead apron is essentially woman's work. In Surinam, de Goeje says they are made either on a board or on a wooden frame, of which he figures a somewhat unusual shape (GO, 6). In the illustration on plate 14 B, the operator has passed her thighs through the frame in between the bend of the switch and the cotton cross-tie: a position that at first sight makes the shape of the frame appear unusual.

CHAPTER VI

FEATHERS AND FEATHERWORK

Attachment to string: Of larger-sized feathers (79); of smaller-sized feathers (80).

Tying of feather: To feather (81); to stick, etc. (82).

Employment of feather on arrow (83).

Cultivation of artificially colored feathers (84).

79. Comparatively little featherwork is now to be met with in the area under consideration (sec. 476). La Condamine says: The Mayna, Omagua, and divers other Indians make some works in feathers, but they neither come up to the art nor the neatness of those of the Americans (LCo, 86). It will be sufficient here to note the various methods employed in the attachment of feathers to strings, sticks, and arrows.

The method of fixing a feather on a string will depend on the size of the feather. Thus, in the tippets (sec. 538) of the Makusi, Wapishana, and Waiwai, in certain hat crowns (eagle and fowl feather) of the Waiwai, and numbers of other ornaments worn by Indians in the extreme south of British Guiana, wherever the larger-sized feathers are employed, the procedure is as follows (fig. 28): Hold the feather with its underside downward between thumb and index of left hand (A) in such a manner that the midrib rests on the ball of the thumb and the quill falls over the wrist. With a very sharp knife make a cut into the midrib at a spot as near its distal extremity as possible. The cut is not made directly downward at right angles to the surface, but at an angle on the slope toward you, and only to a depth that will admit of no damage being done to the adjacent barbs. With the little piece of shaving pressed between the knife blade and the right thumb, the upper surface of the midrib is gradually yet firmly torn back until a spot is reached about 2 inches from its junction with the quill, when it is cut off (B). Again fixing the feather in a similar position, catch hold of its right half, with the right thumb and index, about one-half inch from its tip, and, pulling gently, drag off the barbs with their attached sheath to a level with the cut surface of the midrib (C). Turn the feather over and drag off in similar fashion the corresponding set of barbs on the other half of the feather (D). Now divide the midrib at the spot where the two sets of barbs have been freed, and smooth them out of the curl into which the late manipulation has inclined them (E). The quill is next cut just below its proximal extremity on its underside with a comparatively long incision passing downward, toward you (F), and a second short cut to meet it, passing upward, from

you (G), the result being a more or less shallow gap, about half the depth of the quill (H, K). Fix a string across two sticks stuck into the ground and make a start from the left extremity. Placing the cut quill at the back, bend its apex, at the gap, over the top of the string, and, fixing it into the hollow at the base of the gap, press it firmly into the quill (L). Feather after feather is thus looped over and fixed into its own quill, and when a sufficient number has been fixed each is finally held in position, both with its adjoining neighbors and the top string, by means of four cotton twines. These latter are woven over them from left to right in chain-stitch fashion (M) in the

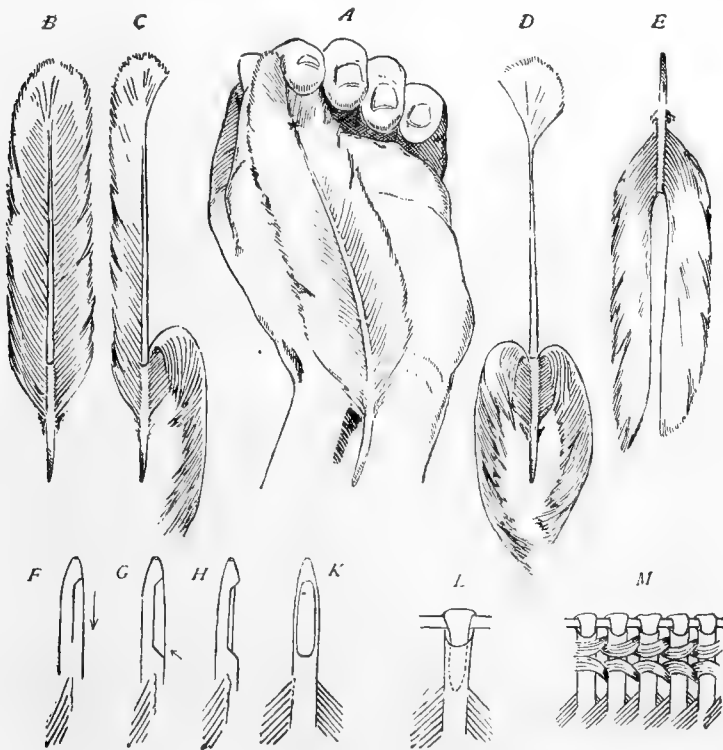


FIG. 28.—Makusi tippet. Preparation and fixation of large-sized feathers.

same way as the four-weft bars of the Wapishana, Makusi, etc., hammocks (sec. 466).

80. The ordinary method of fixing smaller-sized feathers on a string is somewhat less complicated. Pulling off the fluffy portion at the base of the quill, barbs are removed, from both sides of the thicker end of the midrib, along a distance sufficient to allow of the latter, from off which the quill has been now cut, being looped over the twine (fig. 29 A, B, a) upon which it is to be strung. This twine is stretched between two sticks, the freed midrib bent over and tied with a single tying string (b), the type of knot appearing to vary with individual

taste. The two commonest forms are illustrated (A, B). Feather after feather is thus inserted, until finally, for the purpose of holding them in their relative position, a very fine kuraua thread (*c*) is run through each, tying in its course every midrib toward its thinner end.

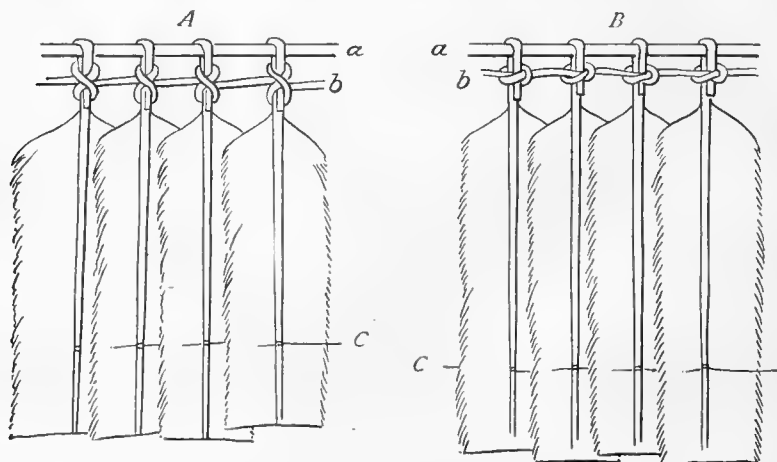


FIG. 29.—Fixation of smaller-sized feathers.

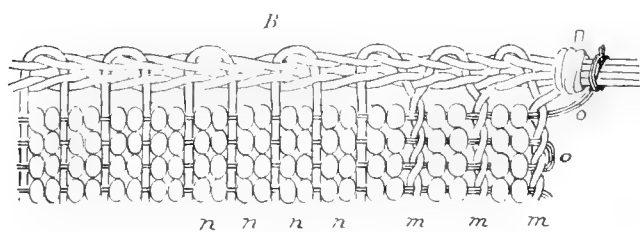
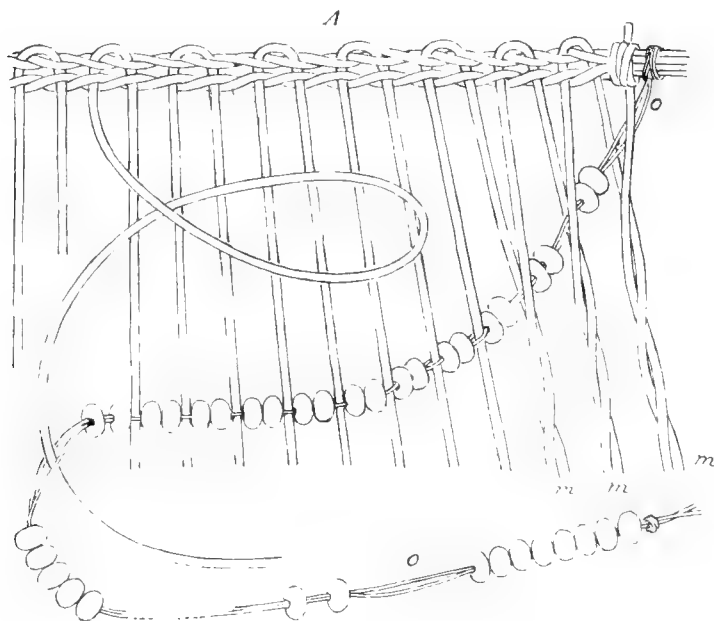
When thus strung on a twine for the ornamentation of the plaited hat crowns, they are subsequently cut to the length required. Sometimes two, even three feathers, may be tied together in one loop (sec. 521). On the other hand, the smaller-sized feathers may be used singly, as is the case with the handle stick of the Arawak medicine man's rattle (sec. 44).

81. On occasion it may be necessary to attach feather to feather, an interesting example being met with in the nose ornament of the Waiwai. This is formed of two macaw feathers, with a small pointed wooden peg tightly inserted into the quill of one. The peg, passed through the nasal septum, is inserted into the empty quill end of the other, so as to give the appearance of continuity. Along the midrib of each feather, both front and back, are gummed small pieces of colored feathers, overlapping from tip to base (JO).

82. When small feathers are to be attached ornamentally to sticks, as the handle of the Wapishana rattle, the method adopted is very simple (fig. 30). Overcasting the stick from right to left, a feather is taken up at every few turns of the cotton strand and wound round and round the quill.

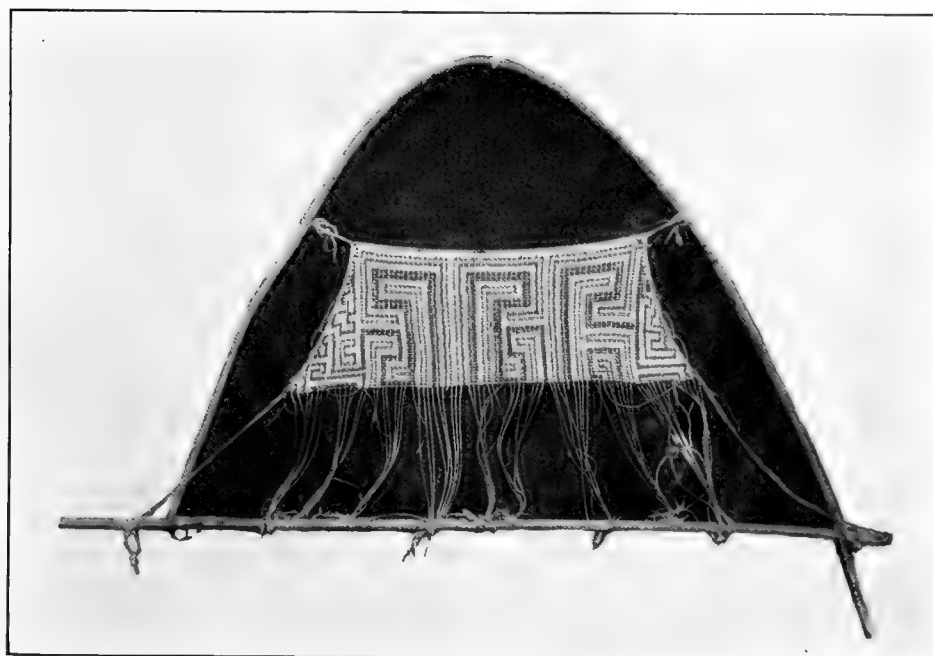


FIG. 30.—Attachment of smaller-sized feathers to a stick.



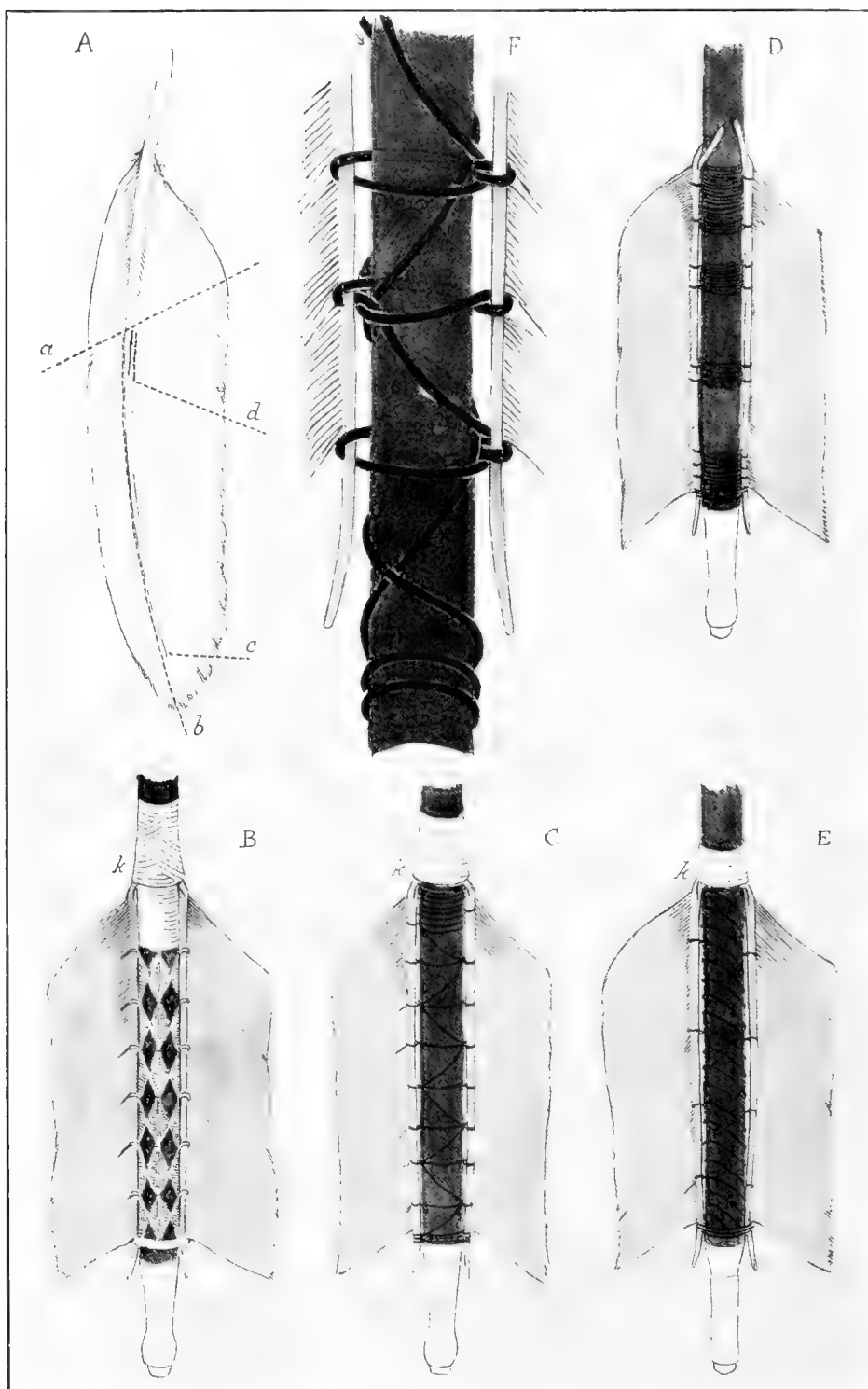
4, *B*, Method of threading the beads.

WER



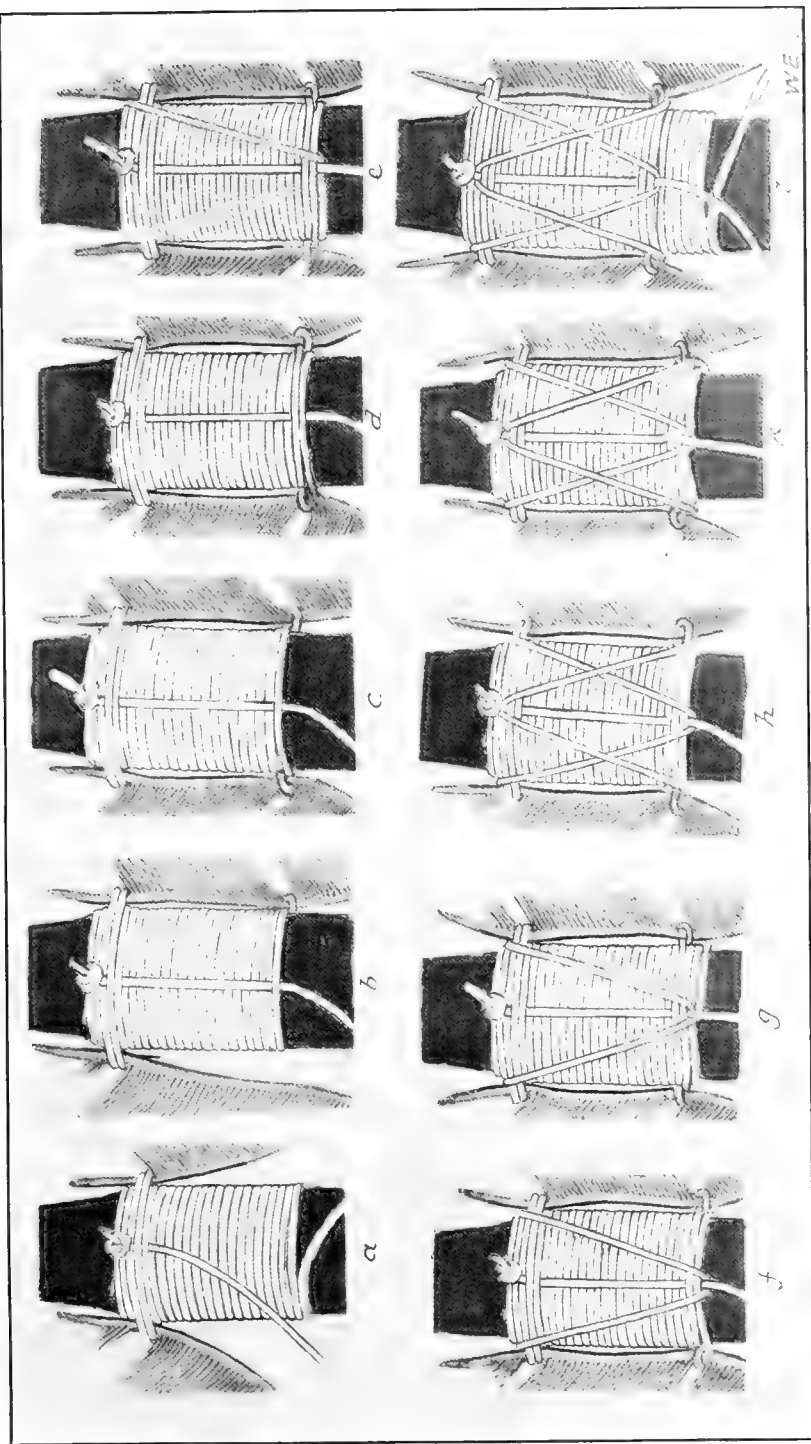
C, The apron in course of construction.

THE GLASS BEAD APRON



VARIOUS ATTACHMENTS OF FEATHER TO ARROW

Method of attachment of feathers to arrow: Diamond (*B*), claw (*C*, *F*), bar (*D*), and spiral (*E*).



TECHNIQUE OF DIAMOND METHOD OF ATTACHMENT OF FEATHER TO ARROW

Front and back can be distinguished by the knot, which has a small tag in the former case and a larger one in the latter. The "diamond" may subsequently be painted red and white.



A, Hexagonal mesh. Height 380 mm. (Georgetown Museum.)



E, Looped mesh. Height 520 mm. Believed to have come from the Corentyn River. (Georgetown Museum.)

COVER BASKETRY

83. If a feather is to be employed on an arrow (pl. 19) it is subjected to certain preliminaries (A), in that it is first cut across (*a*) its base to leave a length of about 4 inches, the barbs of the smaller segment of vane removed by slicing along (*b*) the midrib, the barbs at the tip (*c*) and base of the larger segment cleared away (*d*), and the free base of the midrib split in the same plane as the vane. Two feathers having been thus prepared, they are fixed in position by tying their thinner free extremities toward the butt end of the arrow shaft, care being taken that they lie in the same plane as the arrow tip. The attachment of the barbed portions of the two midribs is next effected in one of at least four methods, which, from their resulting appearance, may be described as the diamond (B), claw (C), bar (D), and spiral (E). The feathers being fixed back to back, when looked at from the sides, the surface of one is convex and that of the other concave. The material for tying is cotton or kuraua. The progressive construction of the claw is shown in F; that of the bar and the spiral can present no difficulties; the diamond, where the use of cotton is invariable, is shown in plate 20. Once the vane portions of the feathers have been fixed on one or other of the above lines, the two halves into which the free bases of their midribs have been split are crossed at a very open angle, and in that position spread upon the convexity of the arrow shaft (pl. 19 D), and so fixed in position by overcasting.

84. The cultivation of artificially colored feathers seems to have been an old practice in the western Guianas and beyond. Von Humboldt gives the earliest record of it from the upper Orinoco when he speaks of a frog . . . allied to the *Rana tinctoria*, the blood of which, it is asserted, introduced into the skin of a parrot, in places where the feathers have been plucked out, occasions the growth of frizzled feathers of a yellow or red color (AVH, II, 313). Similarly, Wallace, among the Uaupes River Indians, described how the colors of certain birds' feathers were altered for the decoration of the acangatára or headdress. The feathers, he says, are entirely from the shoulders of the great red macaw; but they are not those that the bird naturally possesses, for these Indians have a curious art by which they change the colors of the feathers of many birds. They pluck out those which they wish to paint, and inoculate the fresh wound with the milky secretion from the skin of a small frog or toad. When the feathers grow again they are of a brilliant yellow or orange color, without any mixture of blue or green, as in the natural state of the bird; and on the new plumage being again plucked out it is said always to come of the same color, without any further operation. The feathers are renewed slowly, and it requires a great number of them to make a coronet (ARW, 202). Wallace's observations are confirmed by

those of Koch-Grünberg, for the River Aiary (upper Rio Negro) Indians of the present day pull from the tame red macaws the green feathers at the base of the wings and smear the wounds with the fat of the pirarâra fish, or of a certain toad. The new feathers become beautifully orange-yellow and retain this color, even if several times changed, as they are pulled out from time to time, for purposes of dance decorations (KG, I, 84). Im Thurn was told by the Makusi that when the natural feathers are pulled out the place from which they are pulled is rubbed with faroah, the red dye obtained from *Bixa orellana* . . . The bird is also made to drink water in which more faroah has been steeped, after which it is left for some months . . . at the end of which time new yellow feathers have grown in the place of the abstracted green ones (Ti, June, 1882, p. 28). According to Crévaux, the bird was made to eat certain fat. His observations were taken on the Inirida, a branch of the Guaviare (upper Orinoco). Thus, as he reports, the Puinabo possess the secret of coloring parrots yellow. They make them eat the fat of cajaro, a fish very common in the Guaviare . . . This fat is yellow. The parrot's feathers first become spotted with yellow, and end by taking this color entirely (Cr, 532). The Pomeroon Indians at the present time maintain that certain of the green parrots, if fed with yolk of egg, will change their feathers to a yellow color. The Indians on the banks of the Oyapock [Cayenne] have found the way artificially to engraft, if we may call it, a new plumage upon their parrots, of natural colours, though different from those they had originally received from nature. This they do by pulling some of their feathers, and rubbing the part with the blood of certain frogs, which is called in Cayenne "ornamenting a parrot." Perhaps the whole secret consists in bathing the part pulled with some sharp liquor, or, perhaps, there is no need of any preparation, and it is an experiment yet to be made. In effect it does not seem a whit more extraordinary to see red or yellow feathers grow upon a bird, instead of green that have been plucked from it, than to see white hairs grow upon the back of a horse that has been hurt, in the room of black which were there before (LCo, 87). In connection with this question of artificial feather coloration, the following remarks of J. J. Quelch will prove of interest: "A change, produced by artificial means, in the coloration of birds, and to which I can find no reference in any published volume, seems to be more or less commonly practiced by bird-stuffers in the colony—I refer to the change of the natural purple tints in the colors of the cotingas, the purple being changed to a lively red by the application of heat in each case to the feathers of the dead bird. It seems possible that this change can also be produced in the feathers of the living bird, but I have not been able to obtain any satisfactory information on this point." (Ti, June, 1887, p. 142.)

CHAPTER VII

METAL WORK, LEATHER, AND BARK

Gold (85); silver (86); leather (87); bark (88).

85. Gold was worked on the islands as well as on the Guiana mainland; silver was worked in the latter, but only to a comparatively small degree. It appears to me, writes Chanca in his narrative of the second voyage of Columbus, that these people [Santo Domingo] put more value upon copper than gold. They beat the gold they find into very thin plates in order to make masks of it, and then set it in a cement which they prepare for that purpose. Other ornaments they also make of the gold, which they wear on the head and hanging from their ears and nostrils; and for this object it is equally required that the gold should be in the shape of a thin plate. But it is not the costliness of the gold that they value in their ornaments; it is its showy appearance (DAC, 450-451). The apparent preference by Island Carib of copper for gold, especially in the form of caracolis, is confirmed by not a few authors (sec. 751). Such copper ornaments were obtained from the Spaniards, the price for one of them being a negro (PBR, 247), as well as from among the booty annually plundered from the Arawak (RO, 446). So, on the mainland, thin plates of gold in the shape of half moons or crescents were worn hanging from the ears (sec. 506) and nostrils (sec. 505), and larger ones on the chest (sec. 537). Gumilla speaks of Carib in the neighborhood of the Orinoco wearing half-moon shaped plates of gold as decorations, etc.; and Alex. von Humboldt says that up to 1760 the independent Carib had gone to the Pakaraima Ranges (Cerro de Pacaraimo) to collect gold dust in their drinking cups and sell it to the Dutch on the Essequibo. The Carib of the Essequibo, Caroni, and Cuyuni know how to wash it (SR, II, 432). The natives of the Orinoco had a name in their languages for gold—*carucuru* in Carib, *caricuri* in Tamanac, *cavitta* in Maypure (AVH, II, 382). In British Guiana we find the Arekuna and Makusi using the term *caricuru*, also *carucúri* (App, II, 597). On the islands, the word is recognized again as *caracoli* (sec. 751). The following excerpt is taken from the "Table of Rivers, etc., of Guiana, Hakluyt's Voyages, vol. 3": "This river [the Corentyn], as also most of the others, is not navigable above six days' journey by reason of rocks. . . . Some images of gold, spleen stones, and others, may be gotten on this coast, but they do somewhat extraordinarily esteem them, because everywhere they are current money. They get their moons and other pieces of gold by exchange, taking for each one of their greater

canoes one piece or image of gold, with three heads; and after that rate for their lesser canoes they receive pieces of gold of less value" (Ti, Dec. 1887, p. 351). We have the following record from Surinam: "A Yaio, an ancient man who came down from the head of the River Selinama [Surinam] . . . showed me before his departure from me a piece of metall fashioned like an Eagle and as I guesse, it was about the weight of eight or nine ounces troy weight, it seemed to be Gold or at leastwise two parts Gold and one Copper. I offered him an axe which he refused, to which I added foure knives, but could not get it of him. . . . I demanded where hee had that Eagle, his answer was, hee had it of his uncle who dwelt among the Weearaapoyhs in the Countrie called Sherumerimary neere the Cassipagotos Countrie where is great store of these Images. Further he said, that at the head of the Selinama and Marwin there were great store of the Halfe-Moones which he called by the name of Unnaton" (Ano, 405-409). An early account of gold is given by Harcourt from Cayenne: "As I daily conversed amongst the Indians [at Rio Oyapock] it chanced one day that one of them presented me with a halfe Moone of metall which held somewhat more than a third part Gold, the rest Copper: another also gave me a little Image of the same Metall, and of another I bought a plate of the same (which he called a spread Eagle) for an axe. All which things they assured mee were made in the high countrey of Guiana, which they said did abound with Images of Gold, by them called Carrecoory" (HR, 387). The Nolague, who lived at the head of the Approuague, were celebrated for their bracelets and collars of massive gold (Cou, I, 146).

It would be interesting if it could be shown that the moons or images of gold with three heads mentioned above refer to the shape of crescent seen in the silver earrings of the Arekuna, etc. (pl. 147 C), that is, two "horns" and a central boss.

86. As already mentioned, silver was worked to a very small degree in the Guianas, as compared with the richer metal. Indeed, the following is the only reference to it that I have so far discovered in the literature, from the Orinoco Indians: "Those who can afford it [adorn their ears and nostrils] with little thin plates of silver or gold which they themselves fashion after their style (*laboran á su modo*)" (G, I, 124). Such ornaments are described and figured elsewhere (secs. 505, 506). Strange as it may seem, I can find no native name for silver, the term *prata* used by the Indians being, of course, corrupted from the Spanish, and yet it would appear that the metal must have been known to them. At Koumaka, Serima Creek, Essequibo River, "One of the natives returned . . . with a lump of silver clay in his hand which he informed us was the produce of a spring about three hours' distant in the woods. We found it strongly impregnated with that ore" (StC, II, 136). So, also, at Fort St.

Joaquim, on the Takutu River, the commandant reported that the Indians from the upper Rio Branco had brought him specimens of silver at different times (ScG, 255).

87. Among the contributions transmitted from British Guiana to the London International Exhibition of 1862 was a series of barks used in tanning, collected by W. C. McClintock, Pomeroon River. About 35 of these, with their Creole and native names, are mentioned, together with an explanatory note that these barks are all used in tanning by the Indians [Arawak and Carib], but the amount of tannin contained in them is very various, and some of them contain but a very small quantity (CC, 27). In view, however, of the fact that, except in the case of drums, coverlids of some of the quivers, and certain obsolete Orinoco fighting shields made from manati hide (G, 1, 289), native Indian leather work is conspicuous by its absence, I can only conclude that the statement that all the above-mentioned barks were utilized by the Indians must be an error.

88. Not having had opportunities of observing or learning the methods of preparing the bark in the manufacture of laps (sec. 547), masked dresses and shirts (sec. 539), mats (sec. 401), dusters (sec. 275), etc., it would be useless to do more than mention the existence of such a material here. Penard speaks of laps made from the pounded bast of the Manbarakrak (*Lecythis ollaria*) among the Carib (PEN, 1, 95). Bark strips, without being apparently subjected to any preliminary treatment, are utilized as binding ropes, basket straps, and as the basis for certain circular hanging trays (sec. 411).

CHAPTER VIII

POTTERY

Choice of clay (89); mixed with certain ingredients (90).

Manufacture of the vessel (91); firing (92); luster and glaze (93); painting and patterns (94).

Protection against damage, etc. (95).

Modern figured pottery (96).

Old-time pottery: Figured (97, 98); other objects (99).

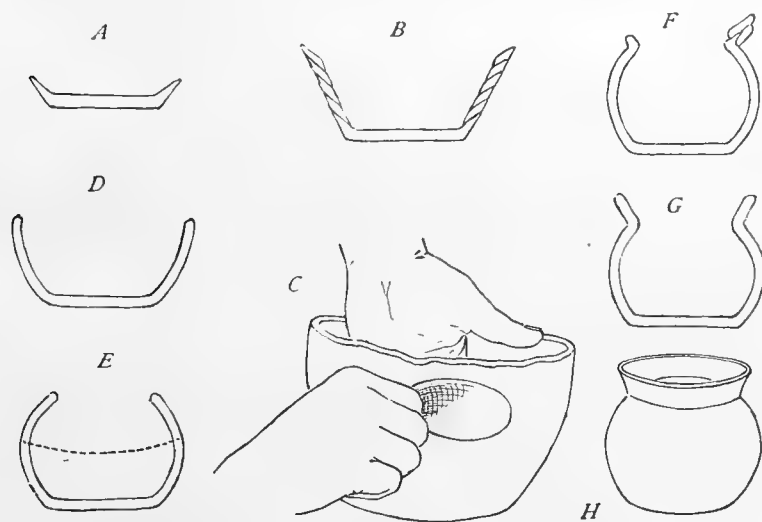
89. The whole subject of pottery in its different stages and relations requires a great deal further investigation, and, indeed, the sooner the better, for with the introduction of cheap tinware the art is becoming rapidly degenerate and lost.

There would seem to be variations in the quality of the clay for which the potter has a predilection, but nothing is definitely known of their exact nature. Although suitable clay is to be found in almost all the small streams of the coastal region, there are some particular localities where it is considered to be especially good. To such belongs a small hill on the left bank of the mouth of the Cuyuni, whence Indians come from long distances to obtain their requirements (SR, I, 261). Hilhouse also speaks of the Cuyuni being crossed by large veins of clay, which the Indians travel great distances to secure for the manufacture of their cooking utensils, on account of its superior fireproof quality and its milky tinge (HiB, 321). Although the clay from the Pomeroon River may be of poor quality (IT, 275) it is nevertheless good enough for the present-day Carib from the upper reaches of the Moruca, who paddles across the intervening stretch of sea to secure it.

90. According to various authors, clay was mixed with certain other ingredients before it was manufactured, but the reasons for the mixing, even when furnished, would seem to be neither uniform nor satisfactory. If the bark of a certain tree, called by the Arawak *kawta* (*Artocarpus*?), burned and ground to powder is mixed with the clay it makes the vessels quite black (IT, 277). On the upper Rio Negro, Wallace (ARW, 342) and Koch-Grünberg note the mixture of the clay with ashes of caripe or caraipe bark, the latter stating that it renders the clay more adhesive (KG, II, 24). In Surinam it is mixed with ashes of the kweepi [caripe] bark (FE, 61) to give it a yellowish red color when baked (WJ, 88). Elsewhere, in making their goblets for keeping water, the women take care to add the ashes of a bark called couépi [caripe], which renders the clay more porous, so favoring coolness by evaporation (Cr, 193). On the

Guaviare River the mixing of the clay with the cinders of mingala bark evidently promotes glazing (Cr, 507). At the head of the Barama River this [potter's] clay has a grayish color and is mixed with the loose materials of decomposing granite (ScB, 189).

91. The following description of the manufacture of a clay vessel is taken at first hand from what I have observed among the Carib old women of the upper Manawarin, a branch of the Moruca River. The well-known "buck-pot" is being made. The clay, already broken out of the ground with a thick, heavy, pointed stick, is cleaned of all dirt and foreign particles, and during this cleaning process is mashed with the hands, but without water. In this condition it may be left for years, if necessary, before being worked up, but it gradually



WER

FIG. 31.—Diagram to show method of construction of buck pot.

becomes harder. To be worked up it is now pounded and mixed with water, and, taking up lump after lump it is rolled with the flat of the hand, on a board, into a coil about 14 inches long and five-eighths of an inch thick. These coils, a dozen or so, are placed by the potter at her side. She then takes another lump of clay, presses and squeezes it between her hands, and makes a circular pat of it in the center of the board. The edges of this slab are everted so that in section it has the appearance represented in figure 31 A. A coil is now taken and placed around and inside of the everted edge of the preceding, both coil and edge being squeezed together at close intervals with the left thumb and forefinger on its passage round. If, as is usually the case, the coil happens to be longer than the circuit, it is pinched and pulled off. The vessel is thus built up, not

of one continuous coil, but of several, each succeeding one adding to its height. More than this, the effect of the squeezing is not only to make adjacent coils cohere, but also to "lock" them, the upper level of each coil, as an effect of the procedure, being lower on the inside than on the outside (B). When a height of about $3\frac{1}{2}$ to 4 inches has been reached in the making of the pot, a simultaneous shaping, thinning, and smoothing takes place; the more or less irregularly sloping walls have to be pressed in here or pressed out there to obtain the necessary contour, at the same time that the component coils have to be squeezed more and more together to obliterate the lines of junction, while their composite surfaces inside and out must be smoothed into one harmonious whole. This is all effected by means of the open hand pressing against the inner wall. At the same time a smooth, spoon-shaped piece of calabash is made to exert with its convex side an equal pressure on the corresponding outer wall (C). This process is now reversed, the hand being pressed on the outer wall and the calabash on the inner. In section the result would be something like D. Three or four more coils are now added and treated with one another in similar fashion as regards shaping, thinning, and smoothing, but on this occasion the vessel instead of being widened is narrowed (E). When the required height of the body of the pot has been reached, the upper edge is neatly trimmed with a sharp knife from the outside. This knife is held more or less horizontally, cuts toward the operator, its tip is more or less guided by her free hand held over the inside of the vessel, and is moistened with water. This trimmed edge is now everted, the next coil added to it on the outside, but the immediately succeeding and final one is placed on the inside (F). These two coils constitute the neck and are shaped, thinned, and smoothed as were the previous ones, while the line of demarcation between neck and body is guided by means of the straight edge of a little slip of wood about 4 inches long. The top is trimmed off with a knife, its edges smoothed over and gradually everted (G, H) to make a slight lip. This knife would seem to have replaced the piece of calabash shell that is said to have been formerly used. A piece would be carefully cut from one side of the shell, so that the space left exactly corresponded with the intended lip of the vessel. By means of this nick the shell was then fitted onto the edge of the vessel and so passed around its circumference (IT, 276). A day later, when the clay is a bit drier, the various roughnesses of the surface, especially on the edges of the base, are sliced off with a sharp knife or shell edge, and a smooth, reddish pebble, obtained by barter and upon which great store seems to be placed, is used for polishing. The stone has been described as a cornelian (BE, 7), a red jasper (AK, 67), a porphyry, or celt. The vessel has to be

fired within from three to six days from completion. The goblets, dishes, saucers, and other nonfigured modern pottery are manufactured on practically identical lines and are discussed under Domestic Requisites (secs. 389-391).

92. For firing, an excavation is made in the ground, the vessel inserted, a pyramid of dry wood placed on top and then set fire to, keeping this up until the article is burned. The necessary amount of burning is determined by the sound emitted upon tapping the pot with a little stick (SR, I, 262).

93. With regard to glazing, etc., Schomburgk is responsible for the statement that the Indians employ oxide of manganese to give luster to their native pottery (ScD, 93), but unfortunately omits to mention the method of use. The same authority speaks of the Warrau drying their pottery in the sun and smearing it with a varnish prepared from the soot of old pots mixed with the sticky sap of a mimosa (SR, I, 169). Koch-Grünberg speaks of the polishing of the pots with the resin or milk of the cuma tree (KG, II, 228), and some of the Carib are said to have the knack of producing a fine glaze on the vessel by the application of certain juices (PEN, 128), while Kappler, in Surinam, speaks of smearing with a sort of copal varnish (AK, 175-176). This last statement is somewhat interesting, in that Humboldt mentions the same material (*Hymenaea courbaril*) as used among the Maypure of the Orinoco for covering over the paint work on their pottery (AVH, II, 309).

94. Pottery may be stained black with the juice of some particular herbs (BA, 278) or with the soot from used pots mixed with the slimy gumlike sap of the Inga (SR, I, 262), as I have observed for myself on the Pomeroon. In other cases a pattern may be painted on the article with the same material or with genipa, as in Surinam (WJ, 88). I have seen it fixed with a second firing. When a red pigment is employed it is obtained from the *Bixa orellana* or the *Bignonea chica* (SR, I, 262) or from the *Bellucia aubletii*. A white paint may also be used (WJ, 88), while Kappler speaks of painting with the juice of a beetle which gives a brown color (AK, 175-176). So far as the Pomeroon Carib patterns are concerned—absent only, as is the case generally elsewhere, on the very large water and paiwarri jars and the "buck" pots—they would seem to be, with one exception, more or less conventional and arbitrary, it being very rare to find any two alike. Thus on a goblet I have seen such varying patterns as a hog-tooth necklace, a snake, a turtle shell and eggs, an earthworm, and many other figures which even by the potter herself were not intended to represent anything. The one exception is the scorpion tail, which seems to be typical of Carib manufacture (WER, VI, sec. 240). Among composite forms is the mythical snake and tree of the same tribe (WER, VI, sec. 235). [For more advanced designs, coloration, etc., see section 391.]

95. To strengthen the larger cassiri and other jars, or rather to lessen the force of impact under stress of blow or upset and also for purposes of transport, they may be covered (pl. 21 A, B) with open basketry (sec. 449). It is inconceivable, as has been alleged (KG, I, 67), that such a covering could prevent the bursting of the vessel under pressure arising from the fermentation of its contents.

96. Modern figured pottery. I feel very much inclined to the opinion that the present-day manufacture of clay figurines by certain

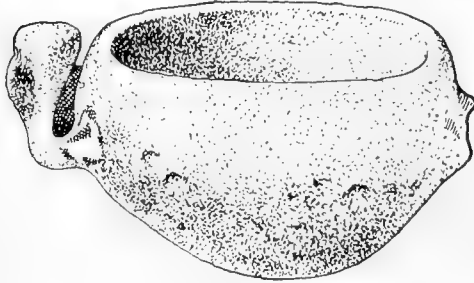


FIG. 32.—Old-time bowl with figurine handles.
(Georgetown Museum.)

of the Carib, notably in Surinam, is due both to a development of the plastic decorative treatment of the water jars and other vessels in the times of long ago, and in large measure to European influences. The comparatively high artistic taste displayed would thus in a sense be accounted for,

while the time, labor, and patience expended on the manufacture of objects for which the makers themselves have no use would certainly not warrant the Indians modeling them for any other purpose than that of trade. In the catalogue of contributions transmitted from British Guiana to the London International Exhibition of 1862 there is a record (p. 52) of "Figures of clay, made by an Indian of the Carabisi tribe, and representing human beings and an armadillo," together with a note that they were the only specimens of Indian plastic art ever seen by the contributors. I have obtained children's clay whistles (sec. 568) and rattles (sec. 620) in the shape of frogs and turtles made by the Moruca River Carib, but they are in no sense comparable with what the Surinam Carib are capable of doing (pl. 22 A, B). Joest describes and figures a duck and its variations (WJ, pl. ii, figs. a, b, c) from the Maroni; I have secured an alligator (pl. 22 C) and a plate (pl. 22 D) from the same district.



FIG. 33.—Side view of figure 32.

97. Of old-time pottery there seems to be comparatively little recorded, and this mainly from the islands (*e. g.*, JWF, vi); but in the middens and shell mounds (sec. 773) along the coast line of our own colony, and farther eastward, there have been unearthed from time to time various grotesque heads and figurines (pls. 23–26), a few effigy vessels, and other objects. The first mentioned, by far the



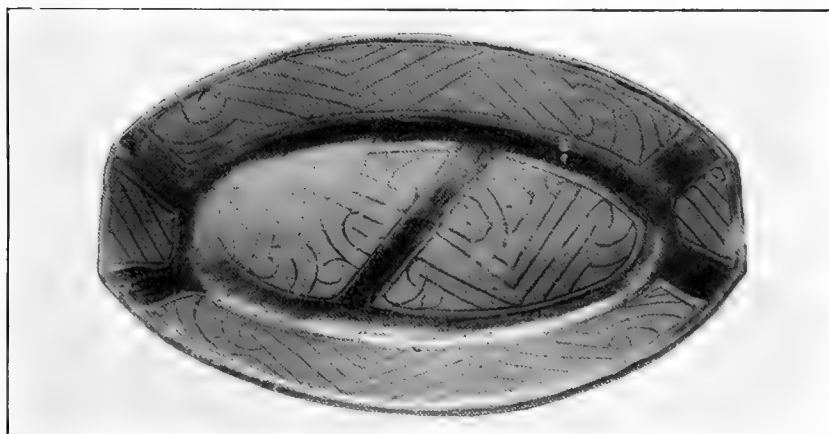
A



B



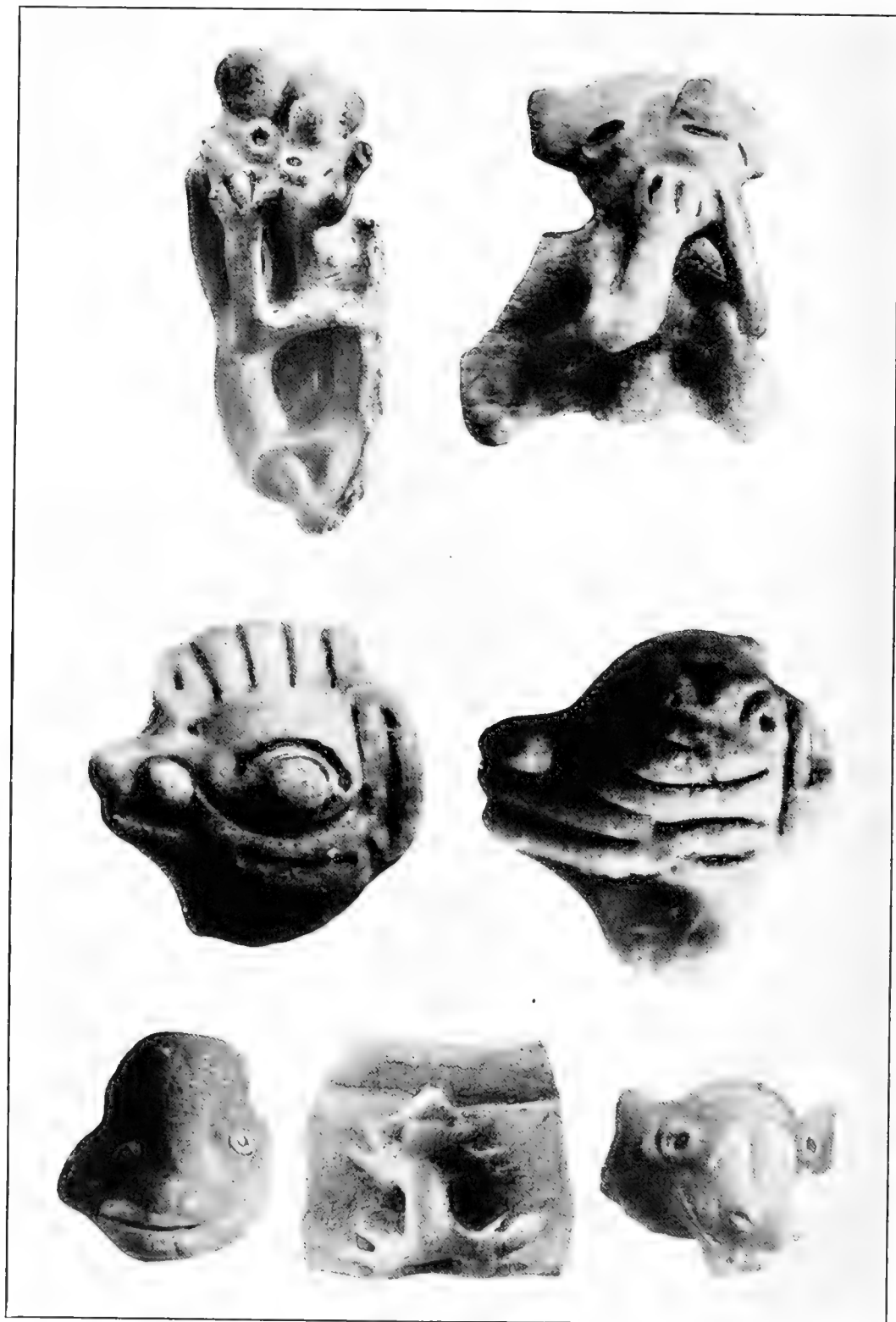
C



D

MODERN POTTERY, SURINAM CARIB

A, B, Modern pottery figurines, made by the Surinam Carib. C, Modern figurine pottery: Alligator. From the Maroni River district. D, Modern plate obtained from the same Indians as the preceding.



OLD-TIME POTTERY HEADS AND FIGURINES

From the British Guiana Coastal Region. (Georgetown Museum.)



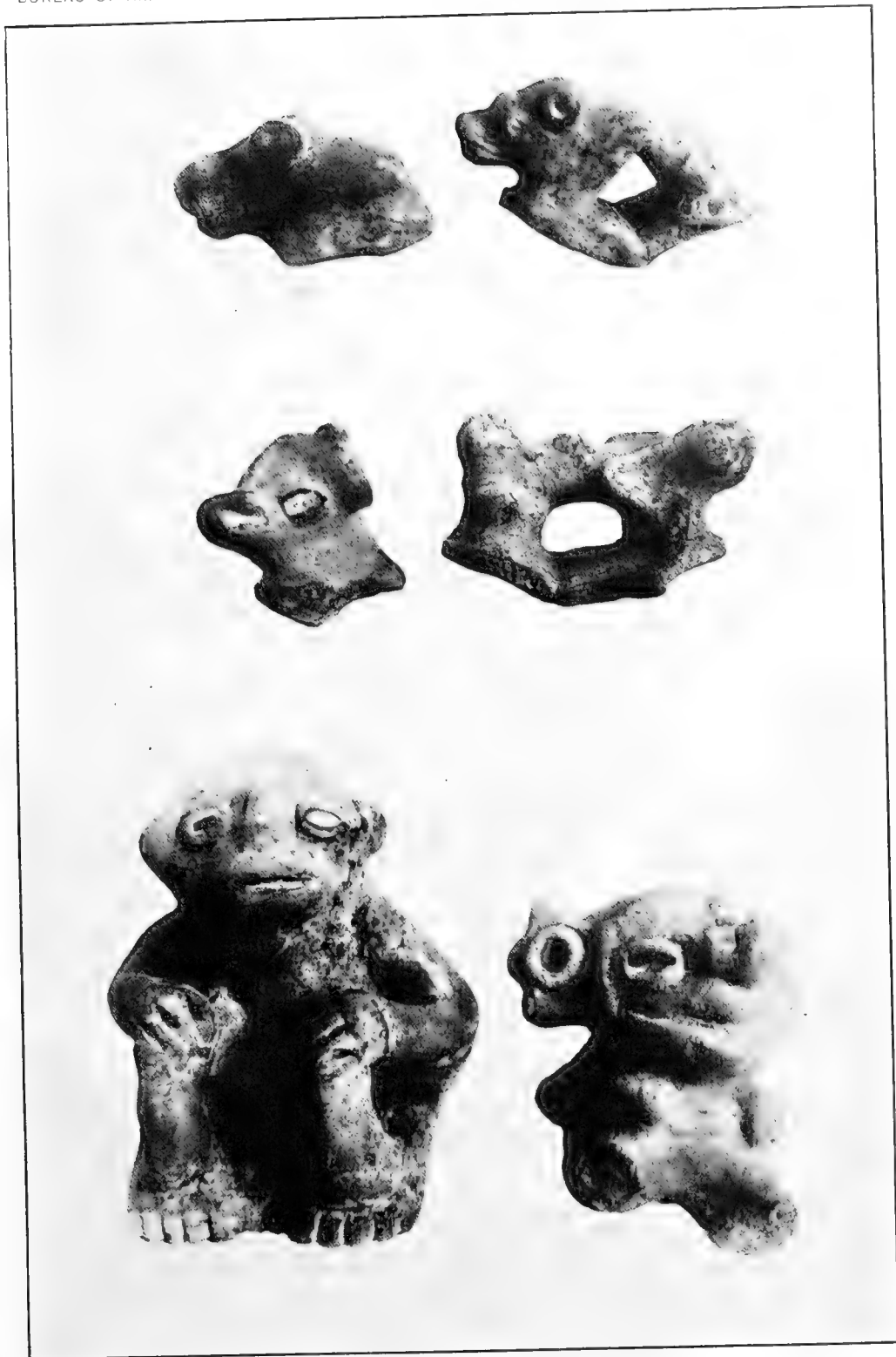
OLD-TIME POTTERY HEADS AND FIGURINES

From the British Guiana Coastal Region. (Georgetown Museum.)



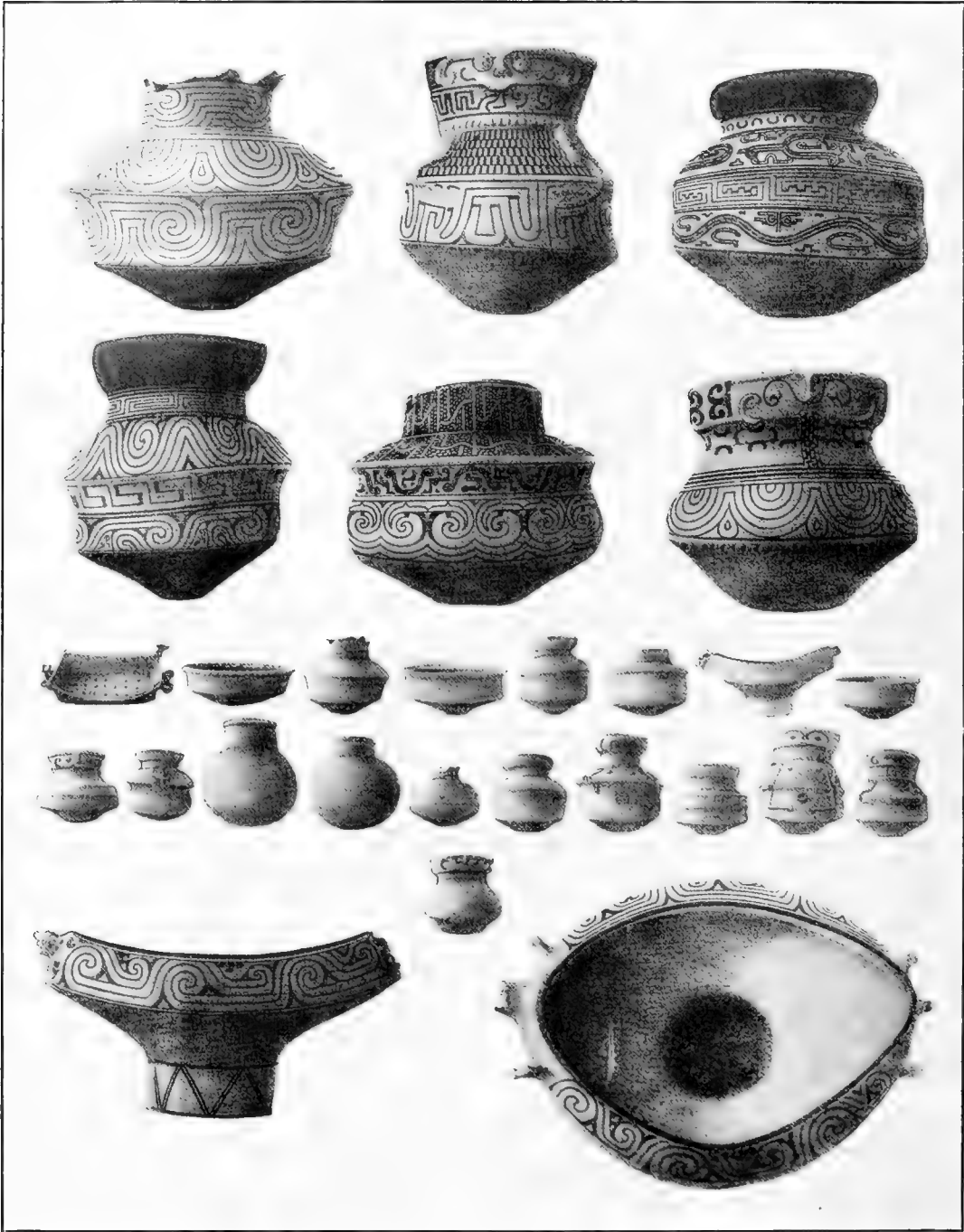
OLD-TIME POTTERY HEADS AND FIGURINES

From the British Guiana Coastal Region. (Georgetown Museum.)



OLD-TIME POTTERY HEADS AND FIGURINES

From the British Guiana Coastal Region. (Georgetown Museum.)



OLD-TIME TRANSITIONAL FORMS OF POTTERY

From the Brazilian-Guiana Coastal Region. (After Goeldi.)

commonest, show signs, in the large majority of cases, of having been broken off from what by analogy were probably bowls, vases, or jars, of which some of them constituted the handles.¹ But it is indeed unfortunate that the finders of these archeological objects should have almost invariably discarded the nonornamental fragments, with the result that their true and exact relations can be only conjectured. The only such complete bowl, with but one handle, however, that has been recovered from the area mentioned is represented in figures 32 and 33.

98. Whereas, in the series just described, the figurine is part of the bowl, vase, or jar, there is another group distinguishable by the figure itself constituting the article which is now known as an effigy bowl, etc. The underground burial caves (sec. 836) at Counany on the Brazilian-Guiana coast line have supplied us with some

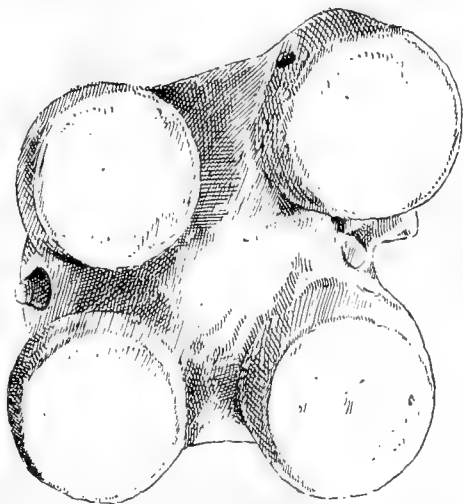


FIG. 34.—Base of four-legged effigy vessel shown in pl. 31.

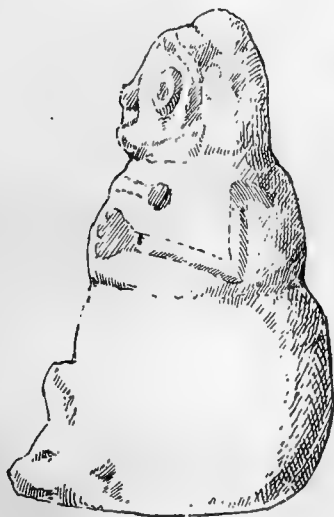


FIG. 35.—Pottery effigy; probably a child's rattle. (Georgetown Museum.)

extremely interesting types of old-time pottery articles, certain of which show transitional forms between true effigy vessels and plain wide-mouth jars (pls. 27, 28) similar to those obtained, within recent years, more to the westward (pl. 30 A, B). Effigy vessels, fragmentary (pl. 32 A) and complete, have also been obtained from our own colony. Among the latter is a very curious composition (pl. 31 A) with an extra head (pl. 31 B) modeled on a four-legged base (fig. 34). Other specimens of this effigy series include certain forms (pl. 32 B, C) which, from analogy, I am inclined to regard as children's rattles (fig. 35).

99. To be included among remaining objects of old-time nonfigured pottery are various bowls (pl. 33 C), vessels with plain handles (pl. 33 A), portions of griddles (sec. 362), and

¹ There are records of the handles of the burial urns of the Piaroa of the Orinoco being made in the shape of crocodiles or serpents (sec. 852). See description of complete specimen by C. Cooksey in *Timehri*, September, 1919.

fragments of various kinds that have from time to time been unearthed along the Demerara coast line.²

In the Georgetown Museum is a so-called "pottery stamper" from the Grenadines (pl. 33 B). Fewkes has illustrated an identical one from Trinidad (JWF, iv, 215).

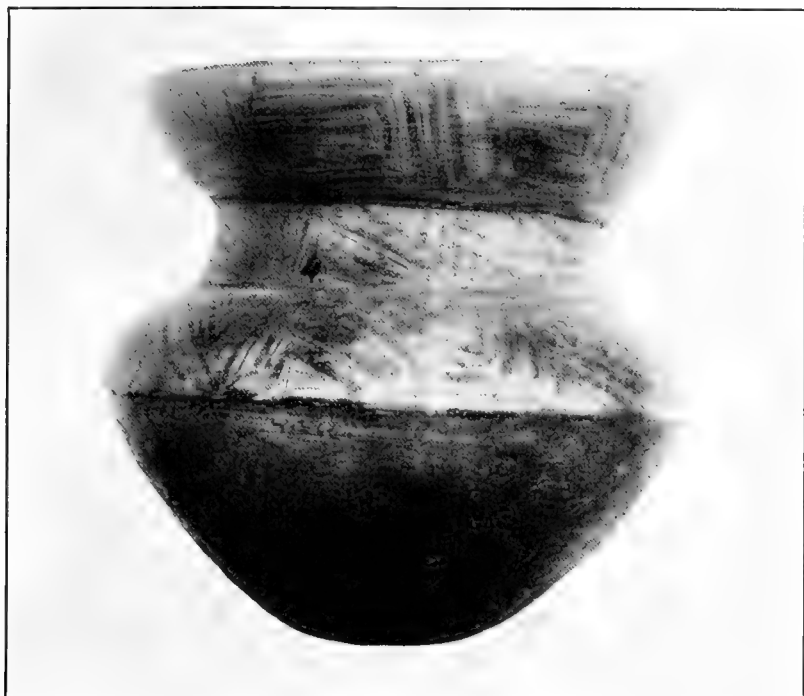
² There is no reason for doubting that with proper search the present limits of discovery would be found extending through Surinam into Cayenne. As a matter of fact, no scientific examination has been made of the middens and shell mounds already known to exist in British Guiana, and it is to be hoped that official steps may be taken with a view to their proper preservation and study, and to prevent them being any further exploited and damaged by money-grabbing curio-hunters.



OLD-TIME TRANSITIONAL FORMS OF POTTERY

From the Brazilian-Guiana Coastal Region. (After Goeldi.)





WIDE-MOUTHED JARS

(Georgetown Museum.)



A



B

OLD-TIME EFFIGY VESSEL ON FOUR-LEGGED BASE
(Georgetown Museum.)



A



B

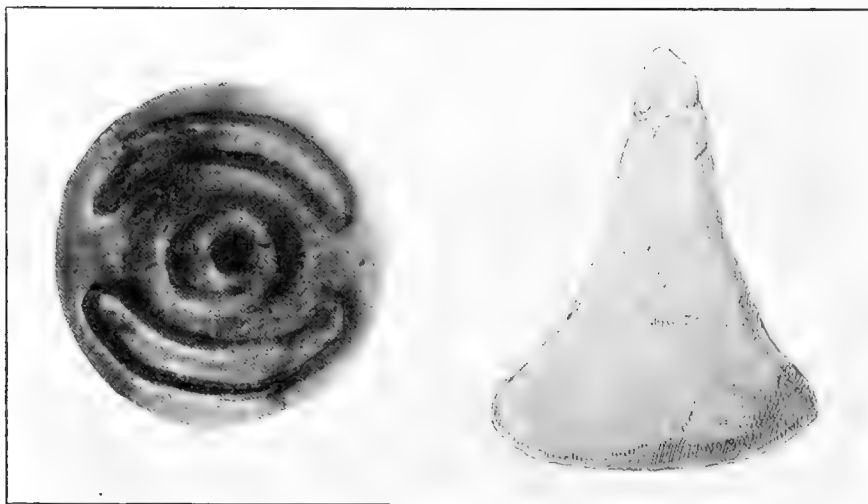


C

OLD-TIME EFFIGY VESSELS
(Georgetown Museum.)



A



B



C

OLD-TIME POTTERY

A, Plain handled jug; B, so-called "stamper"; C, bowls. (All in Georgetown Museum.)

CHAPTER IX

BASKETRY AND PLAIT WORK

Materials employed (100): The preparation of itiriti (101); mamuri (102); awarra and akko-yuro (103); kamwarri (104).

Forms of weaving followed (105-114).

Waterproof basketry (115).

100. Of the materials used in basketry, perhaps the commonest are the itiriti and mükru, the mamúri, the awarra, and akko-yuro. The itiriti and mükru are species of *Ischnosiphon*, known locally as moroca and manna (Mak.), warimba, or warimbo (St, I, 397), maranta, etc.; the mamúri is a "bush rope," a *Carludovica*, known as tibid to the Wapishana; the awarra and akko-yuro are "pimpler" palms, the *Astrocaryum tucumoides* and *A. tucum*, respectively. Another pimpler creeper palm that is not infrequently used is the kamwarri, a species of *Desmoncus* (sec. 72). A species of *Mero-stachys* is employed on the upper Rio Branco (EU, 291). Besides these, there is the fibrous root of the *Pothos macrophylla* Schw. (*Anthurium macrophyllum* Sw.), which was used by the Indians to make baskets (CC, 12). Schomburgk found an Arawak chief on Canje Creek making baskets from the slender branches of a species of bignonia (ScA, 348); a certain tribe on the Brazilian borders of our colony make their pegalls of the leaves of the *Orbigignia* palm (IT, 282); the pegalls of the Oyampi in Cayenne are manufactured from the bark of *Stromanthe sanguinea* (Cr, 202), etc. For temporary basketry, the ite, manicol, and kokerit leaves are very commonly used (secs. 453-457).

101. The process of preparing and splitting the itiriti into the requisite strands for plaiting has been described as follows: The stems of this reed, reaching to a length of 9 or 10 feet, can be used immediately after cutting, but may keep for a couple of weeks or more, provided they are in a cool shade; exposure to the sun dries up and spoils them. When required for use the stem is first scraped of its outer green cortex, and then may be stained with certain black, red, or other dyes (e. g., *Inga*, *Bellucia*); the outer green cortex may, however, be left on the strand in the manufacture of cassava squeezers for Indian domestic use, and of crab quakes (i. e., baskets for carrying crabs). After nicking a ring about one-half inch from its extremity, the stem is split down crosswise—the four primary

splits—to a depth of 7 or 8 inches, and the pith more or less removed from below up, and each quadrant divided again by secondary splits (fig. 36 A, *a, b, c*). After removing some more pith (*d, e*), the four primary splits are extended throughout the length of the stem by gradually and carefully separating them with the hands held laterally (B). The secondary split in each quadrant is next extended in similar fashion, with the result that, from each itiriti eight strands

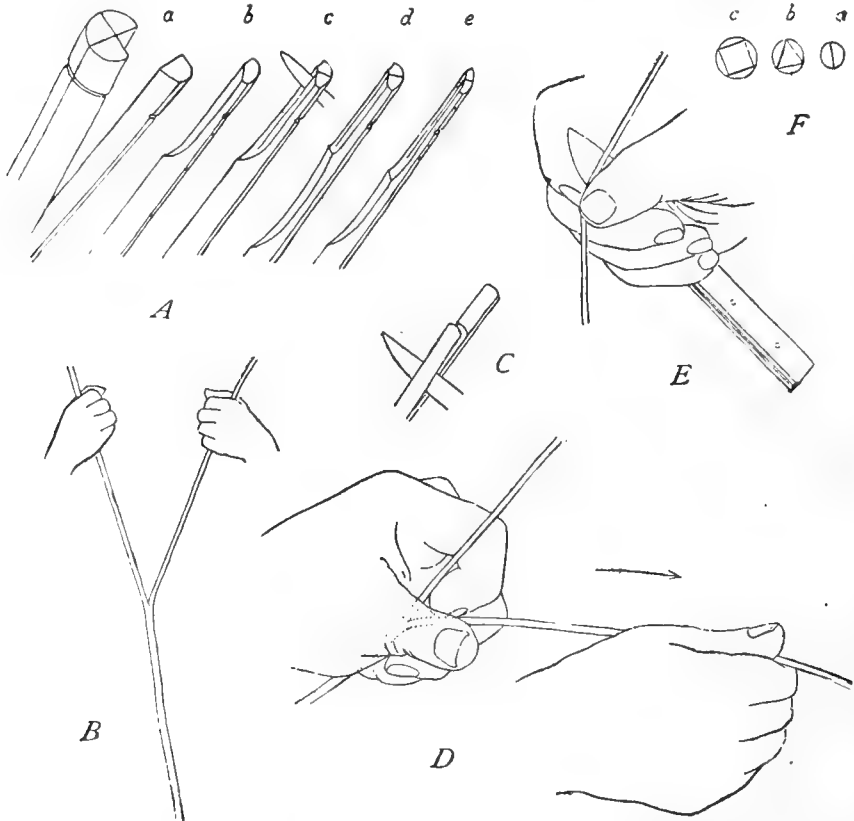


FIG. 36.—Preparation of itiriti (A-E) and mamuri (F) strands.

are derived. If an unusually large stem, the Warrau, as well as the Arawak, occasionally may split each quadrant into three, so as to derive 12 instead of 8 strands, but under these circumstances they are said never to split evenly, and the procedure is not orthodox. Where the circular nick has been made in each of these eight strands, the knife (C) slices downward in such a way as to separate an outer from an inner (more pithy) portion, which portions are next split apart by using the inner side of the nail of the left forefinger as a wedge, and gradually but firmly pulling on the inner of the two portions with the right hand (D). The nail of an expert basket maker is

thus often observed to be chronically damaged. The outer strand is finished ready for use by scraping its edges, not its surface, firmly and slowly over a knife blade (E) until the required width is produced, and in its finished state is called itiriti dabusha (i. e., scraped, cleaned) (WER, II).

102. The preliminary treatment of the mamuri is a much simpler process. Suitable lengths of the aerial stems having been cut, they are soaked in water for as long as three weeks. At the end of this period the outer bark is scraped off with a knife and the stem split, according to its size, into two, three, or four portions, which are plano-convex in section (fig. 36 F). The remaining innermost portions of the stem can also be split again for use, but such strips are not so strong as those first removed (WER, II).

103. The preparation of the awarra and akko-yuro leaf for plaiting purposes is practically identical and may be described as follows: The unopened leaf is cut off and the septa pulled away from above down one by one. Each septum is stuck in its long axis at about the middle with a knife blade, which is then run up to the apex, the basal part of the septum being split by separating with the hands. The strands so formed shrink considerably, and hence can only be satisfactorily worked in the early morning while the atmosphere is still damp. If plaited when too dry they slip one from the other. For similar reasons the unopened leaf, once removed from the tree, can be kept for only a few days, and then in the cool shade. Each strand is, of course, not of uniform width, but diminishes from butt (proximal) to apex (distal). Used for making fans, etc.

104. Very much after the same treatment as the mamuri, a suitable length of kamwarri vine is cut, its "pimplers" removed, and if not to be used forthwith is kept in water to prevent it becoming too hard to manipulate. The outer bark is scraped off and the stem split into convenient sizes; but of each piece so split only the outermost layer is preserved, scraped, and cleaned, usually by pulling it over and across the thigh under the edge of a knife blade firmly pressed into position.

105. As to the form of weaving followed in Guiana basketry and plaitwork, the following varieties are met with, about half of them defined as nearly as possible along the lines given in the Handbook of American Indians, Part I, page 133.

106. *Checker*.—"The warp and weft pass over and under one another singly, and are indistinguishable" [as a rule; but in the sides of the Makusi baskets (sec. 430), the rims of certain Arawak trays (sec. 405), and in a few other cases they are distinguishable]. In the square mats of the Aiary (sec. 395), certain pegalls (sec. 430) of

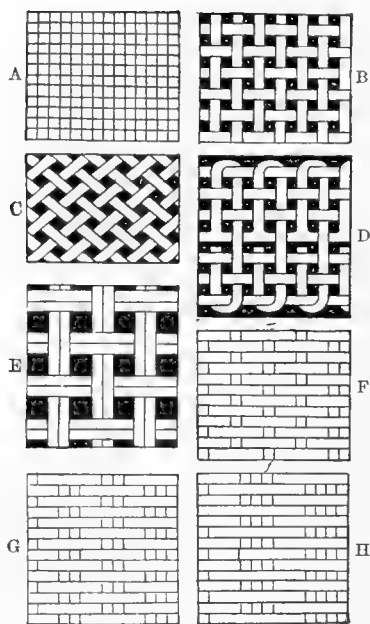


FIG. 37.—Forms of weaving—checker (A-E) and wicker (F-H).

the Makusi (fig. 37 A), sifters (sec. 359) of the Siusi (fig. 37 B), the belly baskets (sec. 439) of the Arekuna (fig. 37 C), the edging of the Arawak, etc. (sec. 405), trays (fig. 37 D), the interspaces between individual warps and wefts may be very patent, and due to purpose, as in the case of sifters, or to methods of construction, as in the belly baskets. In this checker variety must be included the method of weaving adopted in the foundation of certain Patamona baskets (sec. 416), where a pair of strands replaces each single element of the type specimen (fig. 37 E). In this case the very thickness of the strands prevents close apposition.

107. Wicker.—"The warp of one larger or two or more smaller elements is inflexible, and the bending is done in the weft." In Patamona, etc. (sec. 417) blowgun cotton baskets (fig. 37 F), Arawak and Makusi armadillo pattern pegalls (sec. 431), and certain of the knapsacks (fig. 37 G, H).

108. Twilled.—"Each element of the weft passes over and then under two (fig. 38 A, B, C) or more (D, E) warp elements"; in Guiana twilled basketry the warp and weft would appear to be sometimes indistinguishable. In the Wapishana knapsack covers, Patamona and Akawai trays (A), Arawak, etc., sifters (B), belly baskets (C), and trays (D), Carib mats (E), etc., as in the checkerwork, the presence or absence of interspaces is purposeful or accidental. Place will perhaps have to be found here for the Makusi farine sifter (sec. 358), presumably commenced as twilled work (each weft element passing over and then under three warp elements), with every alternate vertical

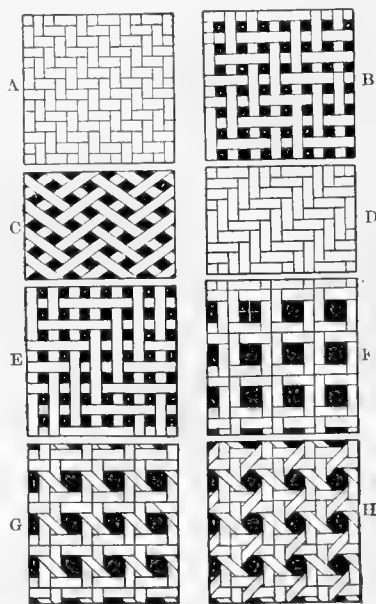


FIG. 38.—Forms of weaving—twilled.

and horizontal pair of strands removed (F), and the diagonals subsequently added (G,H). It is only fair to state that I have not had the opportunity of watching its manufacture.

109. Hexagonal.—The weft passes alternately over a strand of one and under a strand of another of two series of warp elements crossed diagonally. The initial key to the structure of such a piece of basketry is a hexagon (fig. 39 A, B), which may be subsequently filled in with secondary weft (C) and warp strands (D, E). (For illustrations see secs. 412–415.) There is a somewhat unusual duplicate hexagonal plait work (F) recorded from Surinam (GOE, pl. ix, fig. 12), and a triplicate one (G), apparently from our own colony on a knapsack (fig. 188).

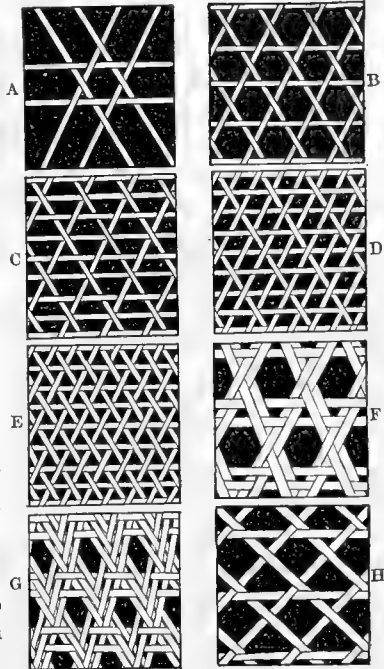


FIG. 39.—Forms of weaving—hexagonal (A–G) and pentagonal (H).

110. Pentagonal.—During the course of manufacture of the walls of certain baskets (secs. 414, 422, 425), but never as an initial stage in basket manufacture, the mesh becomes a pentagon (fig. 39 H). It is formed by weft locking quadrilaterals formed of overlapping warp strands.

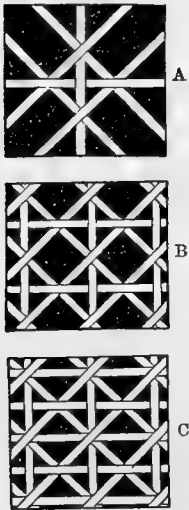


FIG. 40.—Forms of weaving—crossed quadrilateral.

111. Crossed quadrilateral.—The initial key is a figure consisting of two series of strands crossed at right angles and held in position by two strands, also crossed at right angles, intersecting them diagonally (fig. 40 A). The weft passes alternately over two crossed and then under a single vertical warp strand (B). A secondary weft or wefts may be subsequently interpolated (C). In the square open-work Makusi baskets (sec. 429) and certain Wapi-shana and Makusi knapsacks (sec. 451).

112. Twined.—“The warp is not bent and the weft is made up of two or more elements, one of them passing behind each warp element (one or more) as the weaving progresses” (fig. 41 A). I have elsewhere (sec. 466) described this as a chain twist. In certain Rio Negro and other baskets (sec. 416).

113. Wrapped.—“The warp is not flexed, and the weft in passing a warp element is wrapped once around it” (fig. 41 B)—a process employed in fin-

ishing the edges of many baskets in fish creels (sec. 421) and Makusi fish cages (sec. 206).

114. Locked or imbricate.—The warp is here flexed, each complete flexure enclosing either two wefts (fig. 41 C), two wefts and two warp elements (D), or two warp elements and one weft (E). Examples of the first are met with in the band of many of the feather crowns (sec. 520); that of the second in the diaphragmatic loop baskets (secs. 419, 420). The third pattern, seen in the rims of many of the crowns (sec. 520), is extremely interesting in that the itiriti strands entering into its composition are not worked on the

flat, but on their edges, with the result that the thickness of the completed textile is that of the width of the strand. Its general appearance in situ, prior to being stretched out for explanatory purposes to render its construction intelligible, is represented in the sketch F. G is a locked pattern taken from de Goeje's work (GOE, pl. ix, fig. 13), from the rim of a Surinam Indian feather hat, and is perhaps identical with the net basket for crabs of the Aiary River (sec. 220); it should be compared with H, that of a chain-pattern fish net (sec. 201), an unknown type of Guiana basket weaving, but one through which it apparently must have passed in the course of its evolution.

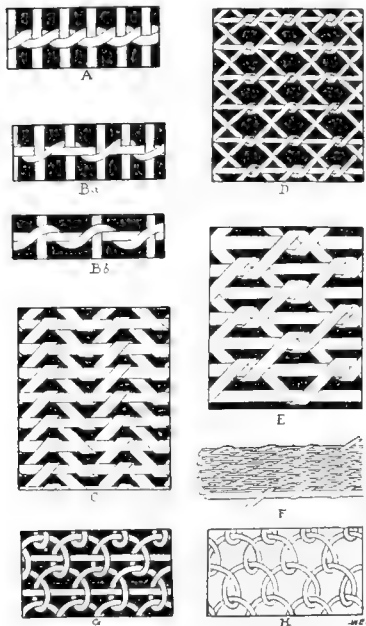


FIG. 41.—Forms of weaving—twined (A), wrapped (B), locked or imbricate (C-G).

waterproof with the help of leaves or pitch. Thus with the dextrous use of leaves the large openwork farine baskets on the hinterland borders of our colony can be, and often are, packed with provisions, such as salt, meal, etc., for which Europeans would require a bottle or box. This is effected by lining them with the broad oval leaves of the itiriti (*Ischnosiphon*). The bottom of the basket having been lined with a single layer of leaves placed in beautifully regular order, a line of the leaves is placed, stalk downward, against the sides of the baskets. Enough farine (coarse cassava meal) or salt is then poured in to reach nearly to the top of the first line of leaves. The lining is then carried up higher, one more row of leaves being added, their stems secured in

115. All varieties of basketry, from the openwork to the close-work, can be rendered practically

the farine. More farine is poured in and the processes are continued until the basket is full. A covering of leaves is then added and tied down. In this way the contents of the basket are entirely guarded against all damp (IT, 282). Again, each pegall (sec. 433) basket and lid may be made double and itiriti leaves inserted between the two layers of each to render them waterproof. This is the case in the Pomeroon area, though in Surinam the leaves of the truli were said to be employed (St, 1, 397; WJ, 90). But whatever the kind of leaf so inserted the resultant effect would help to explain the statement of St. Clair, as well as of others, that the strands were "put together in so close a manner that they will hold water" (StC, 1, 337). In the first description of the Amazons that has come down to us by Acuña mention is made of liquors being kept . . . in baskets made of rushes, which they cover within and without with a sort of pitch, so that they do not leak in the least (AC, 59). Traces of such a practice are still to be found in the quivers for poison arrows of many of the Guiana tribes and in the basket trumpets of the Rios Içana and Aiary (KG, 1, 198).

CHAPTER X

WEAPONS: HUNTING AND FIGHTING

Shields (116).

Blowgun: Of two complete tubes (117); outer tube of two split halves (118); single tube (119).

Darts (120).

Dart and arrow poison: Curare (121); manufacture and uses (122); mancélinier, rappu, markuri, etc. (123).

Quivers for darts (124).

Bow: Timbers utilized (125); manufacture (126); bowstring (127).

Arrow manufacture: Head (128); fixation of barb (129); shaft (130); variations in manufacture (131); feathering (132); nock (133).

Classification of arrows: Head simple, pencil (134); jagged (135); composite and fixed, pencil (136); lanceolate (137); knobbed (138); barbed (139-141); composite and detachable (harpoon arrows) (142-144).

Arrow release (145).

Arrow shooting, practice and skill at (146).

Spears (147).

Harpoon spear (148).

Clubs: Natural forms (149); timbers utilized (150); spatulate type (151); paddle type (152); block type (153); dagger type (154).

116. Shields, variously manufactured, were met with in the Guianas, though references to them are comparatively few. Among the earliest travelers, Wilson speaks of "wooden swords and bucklers" (JW, 345) and Harcourt of "Targets very artificially made of wood, and painted with Beasts and Birds" (HR, 373). Manati hide was employed by the Orinoco Indians in Gumilla's day, to protect themselves from arrows in warfare (G, I, 289), as well as on the Amazon when first discovered (AC, 85), whereas tapir hide is used at the present time on the Apaporis, a branch of the Yapura River, by the Yahuna (Betoya stock) and neighboring Arawak tribes. These tapir shields are large and round with a box-like center, made formerly with five layers of skin, which a bullet could hardly pierce, but now usually with but two (KG, II, 287). Wickerwork shields are similarly recorded from the Orinoco and Amazon, both the main stream and its tributary, the Rio Negro, and appear to have been employed for fighting and dancing purposes. Thus Gumilla talks of the Orinoco Indians weaving shields (*texen rodelas*) (G, II, 89), and elsewhere employing the same term (*rodela*) to denote a Carib fighting weapon (G, II, 91; I, 201). Acuña had previously stated that for defensive weapons on the Amazons they [natives] make use of

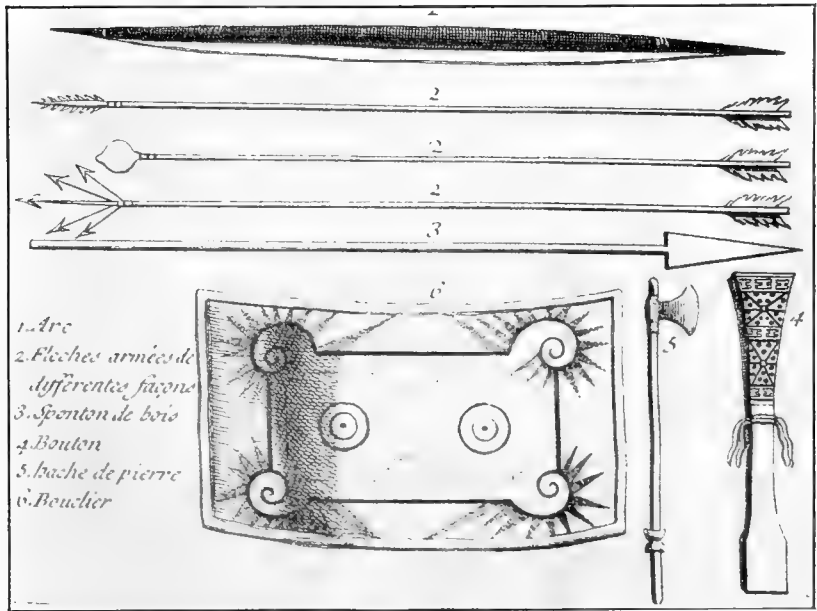
targets which they make of canes split in two, and which they so fitly and closely join one with another, that though they are much lighter, yet they are no less strong than those others which they make of the skin of the fish pegebuey [manati] (AC, 88). On the upper Rio Negro Wallace found wickerwork shields, some of them covered with tapir hide (ARW, 351), among the Uaupes River Indians (ARW, 195, 351), where they have remained up to the present day as dance shields used by the Tukano and Desana (Betoya stock), the illustrations (pl. 34 A) representing them as circular in shape and apparently manufactured on a spiral foundation (KG, I, 344). [It is interesting to note that at the time of the conquest, in 1509, but far to the westward of the Guianas, Ojeda speaks of a brave and warlike race of Carib origin defending themselves with osier targets (WI, 645-646). Another reference to shields, also outside the area under consideration, is given by Simson from among the Jivaro of the Pastassa, a tributary of the Amazon (AS, 91).] Wooden shields have also been noted. Thus, in Cayenne, Barrère mentions a shield (pl. 34 B) made of extremely light wood, which they daub on the front with various colors. The shape is almost square, and a little concave inward, where there is a handle at the middle, which serves to hold it conveniently (PBA, 168). According to a translation given in Timehri, 1893, page 45, of Hartsinck's *Beschrybing van Guiana*, 1770, the only weapon of defense they (apparently Surinam Indians) possess, is a shield of very light wood, which they paint in different colors. Its form is almost square, a little hollow in the center, where a handle is fixed. The Tigiboro shield of the Surinam Carib was large and cut out of the spur of a species of corkwood tree, *bebe* (PEN, I, 52). The Arawak of the Pomeroun, I am informed, employed in the early days a corkwood shield or jacket, known as a *nonabokuanna* (WER, VI, sec. 370). Brett also speaks of a wooden buckler here (Br, 487; BrB, 36). (For wrestling shields, see sec. 608.) The Island Carib are said to have possessed no targets or bucklers (*rondaches*), . . . but their bodies were naked (RO, 526).

117. The blowgun or blowpipe; the *sarbacan* (ScG, 235), *zarabatana* (HWB, 295), or *gravatana* (ARW, 147); the *cura* of the Makusi, etc. Three types of this implement have been recorded, from the westerly areas of the Guianas, according as they are built up of (a) two complete tubes, one within the other; (b) an inner tube incased in another made of two split halves; (c) a single tube composed of two split halves. Among the earliest more or less accurate descriptions of the first type of implement (pl. 35 A, a) is that of Waterton (from among the Makusi). The reed, he says,

grows hollow, nor is there the least appearance of a knot or joint throughout the whole extent. The natives (Macoushi) call it ourah. This of itself is too slender to serve as a blowpipe; but there is a species of palma, larger and stronger, and common in Guiana, and this the Indians make use of as a case in which they put the ourah. It is brown, susceptible of a fine polish, and appears as if it had joints 5 or 6 inches from each other. It is called samourah, and the pulp inside is easily extracted by steeping it for a few days in water. Thus the ourah and samourah, one within the other, form the blowpipe of Guiana. The end which is applied to the mouth is tied round with a small silk-grass cord to prevent its splitting; and the other end, which is apt to strike against the ground, is secured by the acuero (*Astrocaryum*) fruit cut horizontally through the middle, with a hole made in the end, through which is put the extremity of the blowpipe (after the style of the "lip of a trumpet"). It is fastened on with string on the outside, and the inside is filled with wild beeswax. . . . About 2 feet from the end through which the Indian blows there are fastened two teeth of the acouri, and these serve him for a sight. . . . The Indian on his return home carefully suspends his blowpipe from the top of his spiral roof, seldom placing it in an oblique position, lest it should receive a cast (W, 96-100). It was left to Schomburgk to discover the plant utilized for the inner tube, the *Arundinaria schomburgkii* Benth., the curata of the Indians. This grows only in the country of the Guinau and Maiong-kong, in the upper Parima, whence these tribes are called the curata people (ScF, 238), and perhaps in the neighborhood of the sources of the Orinoco (SR, I, 425-426). Von Humboldt had mentioned the reeds as coming from the foot of the mountains of Yumariquin and Guanaja. They are much sought after, even beyond the Orinoco, by the name of "reeds of Esmeralda" (AVH, II, 453). Having cut a suitable length, the Indian dries it over the fire, revolving it on its own axis until all the moisture is out, and then hangs it in the sun until it becomes of a yellow color. . . . The then straight stem of a species of the *Arecinea* family of palms is left in water until such time as the pith is rotted, which is then pushed out with a stick and the *Arundinaria* driven in (SR, I, 425-426). On the upper Rio Negro the inner tube is described as manufactured of arundinea and the outer from the paxiuba palm, *Iriartea exorrhiza* (KG, I, 95-98); but Wallace, on the lower reaches of this river, mentions both as being made from the *Iriartea setigera* of Martius. The stems, the latter author states, are carefully dried in the house, the pith cleared out with a long rod made from the wood of another palm, and the bore rubbed clean and polished with a little bunch of roots of a tree fern pulled backward and forward through it. Two stems are

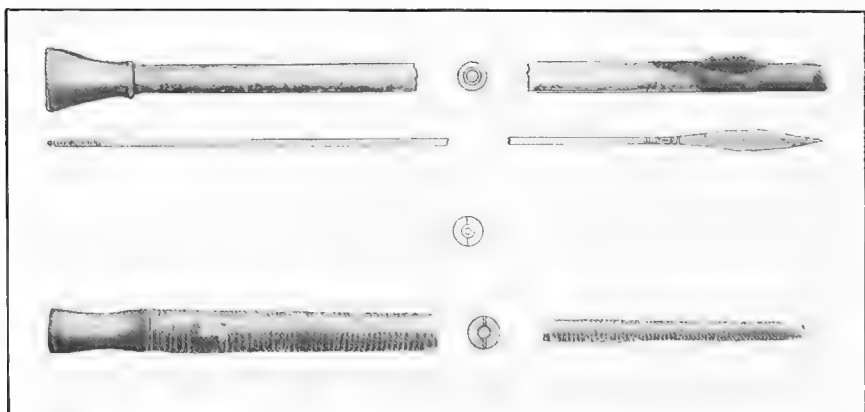


A, Tukano dancers with shield and lance-rattle. (After Koch-Grünberg.)

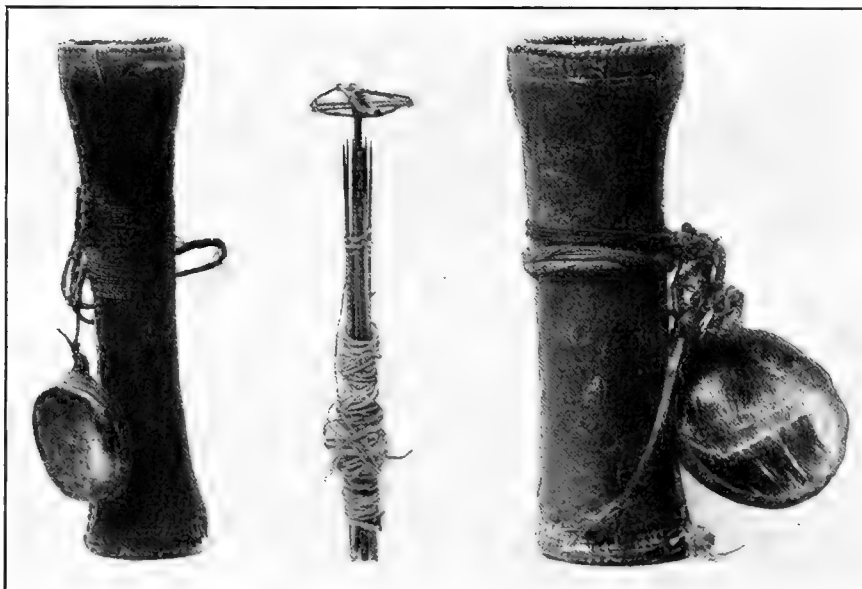


B, Weapons of the Guianese Indians, Cayenne, showing the light wooden shield (6), and the chieftain's pike or serpo (3). (After Barrère.)

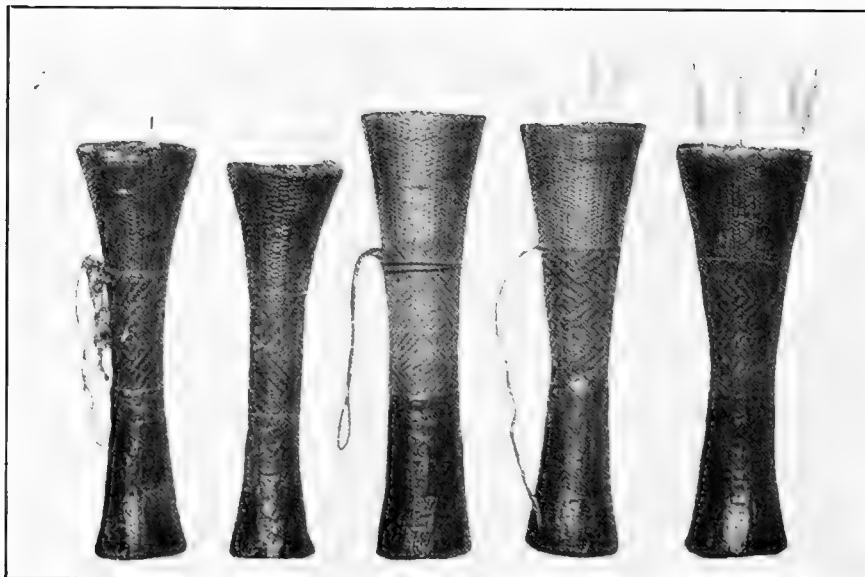
SHIELDS



A, The three types of blowgun. *a*, Two complete tubes, one within the other. *b*, An inner tube incased in another made of two split halves. *c*, A single tube composed of two split halves.



B, Quivers with deerskin covers, and a bundle of poison darts wrapped around a central stick for safety's sake.



C, Quivers for poison darts from the Uaupes River district.

BLOWGUNS AND QUIVERS

selected of such a size that the smaller can be pushed inside the larger. This is done so that any curve in the one may counteract that in the other. A conical wooden mouthpiece is then fitted to one end, and sometimes the whole is spirally bound with the smooth black shining bark of a creeper (ARW, 147). In place of the two teeth being used as sights a bit of black wax may sometimes serve this purpose. Often no sights of either kind appear to be employed. Occasionally for the sake of ornament or perhaps for sale as "curios" (Br, 141) a finely plaited basketwork covers the whole blowpipe. The vast amount of time and labor thus expended upon its decoration need cause no surprise when it is remembered that a hunter preserves a blowtube during his whole life, and boasts of its lightness and precision as we boast of the same qualities in our firearms (AVH, II, 453). Although manufactured by Makusi Indians (CC, 52), blowpipes may be obtained by them in exchange from the Arekuna, Mai-ongkong, and Guinau, in whose territories, as already mentioned, the *Arundinaria* is met with (SR, I, 425-426). Indeed, among the Arekuna this appears the general and specially valued weapon, and only rarely did Schomburgk see them take bow and arrow when they went out hunting. Brett indicates that the Pomeroon Akawai also employed blowpipes (Br, 140). Talking of the Demerara Arawak, Bancroft says: Blowing these arrows (in the blowpipe) is the principal exercise of the Indians from their childhood, and by long use and habitude they acquire a degree of dexterity and exactness at this exercise which is inimitable by an European and almost incredible (BA, 283). Another reference to Arawak and arrowheads [for their blowpipes] is given by Alexander (A, I, 54). So expert are some of the bucks, reports Pinckard, in the use of this tube that at 12 or 14 feet distance they will strike the arrow almost to a certainty upon the edge of a penknife stuck on the back of a chair (Pnk, I, 488-489). The implement at its greatest elevation will send an arrow 300 feet (W, 96-100), but this may, perhaps, be dependent upon its length, which is variously computed at from 8 to 10 (KG, I, 95-98), 12 to 14 (SR, I, 425-426), or even to 16 feet (A, I, 54).

118. The second type of blowpipe (pl. 35 A, *b*) is made of a length of *Arundinaria* incased in the two split halves of the young stem of a certain tree after each half has been suitably scooped out. The whole is smeared with black wax and wound round with bark strip in a somewhat overlapping spiral. It has been described from the upper Rio Negro (KG, I, 96).

119. The third type of instrument (pl. 35 A, *c*) is used by all the Indian tribes on the upper Amazons, but is also met among the Buhagana (Betoya stock) of the Tiquie, a branch of the upper Rio Negro (KG, I, 328). Bates's description of the instrument in this

former locality is as follows: It is generally 9 or 10 feet long, and is made of two separate lengths of wood, each scooped out so as to form half of the tube. To do this with the necessary accuracy requires an enormous amount of patient labor and considerable mechanical ability, the tools used being simply the incisor teeth of the paca (*Coelogenys paca*) and cutia (*Dasyprocta aguti*). The two half tubes when finished are secured together by a very close and tight spirally wound strapping, consisting of long, flat strips of Jacitara or the wood of the climbing-palm tree, and the whole is smeared afterwards with black wax, the production of a *Melipona* bee. The pipe tapers toward the muzzle, and a cup-shaped mouth-piece made of wood is fitted in the broad end. A full-size zara-batana is heavy, and can only be used by an adult Indian who has had great practice. The young lads learn to shoot with smaller and lighter tubes (IIWB, 295).

120. The arrow generally used with the blowpipe is from 9 to 10 inches long. It is made out of the leaf of a species of palm tree called concourite (kokerit), hard and brittle, and pointed as sharp as a needle. About an inch of the pointed end is poisoned (with urali). The other end is burned to make it still harder, and wild cotton is put round it for about an inch and a half. It requires considerable practice to put this cotton on well. It must be just large enough to fit the hollow of the tube and taper off to nothing downward. They tie it on with a thread of the silk grass to prevent it from slipping off the arrow (W, 96-98). The arrows which the Maiongkong use are more than twice the length of those of the Makusi, which are only 12 inches long. They are made of the middle fiber (midrib) of the palm leaf and dipped in poison for 3 inches from the point. The poison looks like the urari, but the Indians call it cumarawa and the Guinau markuri (ScF, 229). The arrows are rendered as sharp as needles by scraping the ends with a knife or the tooth of an animal; that of the pirai fish, *Pygocentrus niger* (SR, 1, 425-426), appears to be very commonly employed. On the upper Rio Negro the arrows are made of the spinous processes of the *Enocarpus batawa* (ARW, 147). According to Pinckard's account, it would seem that the blunt end of the poisoned dart was not always necessarily wrapped round with the silk cotton. He says: The manner of using it (the dart) is by blowing it from a cylindrical tube about 7 feet in length. A bit of cotton is lightly put in at one extremity of the tube, the arrow is dropped in at the other, and falls to the cotton; the lips are then applied and the arrow is forced forward by a sudden puff or jerk of the breath (Pnk, 1, 488-489).

121. Among the arrow poisons employed by the Guiana Indians the most important, and one that has undoubtedly aroused the greatest

interest, is the curare or urari. Other names for it are urari in the lingua geral (KG, I, 98), wourali (Waterton), woralli (Brown), woorara (Bancroft), etc. There is no evidence of its use among the Warrau. Walter Raleigh was the first to acquire certain information of the existence of a terrible and swiftly acting poison known as ourari, while Humboldt was the first to furnish authentic news of its manufacture. It formed the subject of many fables told by the early missionaries. That mixed up with it were the fangs of the most poisonous snakes, dangerous ants; that to test its strength an arrow tipped with the poison would be stuck into a young tree, and if the tree died within three days it was of the requisite quality (SR, I, 445-447). Gumilla gives a hearsay account of its manufacture, in the course of which he says they employ some old woman, who regularly dies from the vapor arising out of the pots, whereupon they then substitute another woman, who may or may not escape its fatal effects. He then continues: To test it when manufactured the cacique, dipping the end of a rod into it, places it close to (but without touching) the blood flowing from a wound purposely made for the occasion by one of the young men, either in thigh, leg, or arm; if the blood "runs back" into the incision, the poison is first class, but if it remains in statu quo or continues to flow the curare has to be put on the fire again (G, II, 124-132). The preparation of the poison and the various ingredients differ in each tribe which makes it.

Strychnos of various species are employed (as essential), but the *toxifera* is the most deadly, and, growing as it does in the Makusi country, these Indians have the reputation of manufacturing the best article. Their poison takes but a few minutes to act, while that made on the Rio Negro and Orinoco may take hours. Von Martius described its preparation on the Amazon and Yapura, Poeppig in Peru and Chile, and Humboldt from the Orinoco at Esmeralda, but apparently in all three cases different ingredients were used. At Esmeralda the patriarch of the only family left when Schomburgk's brother subsequently visited there in 1839 said that he used to get his poison from the Guinau and Maiongkong. They made it from the *Rouhamon guianensis* Aubl. or *Strychnos cogens* Benth. (SR, I, 445-447). According to Gumilla, the only nation on the Orinoco who knew the secret of manufacture was the Caberre. He believed the poison to be identical with that met with on the lower Amazon among the Tapajoso Indians (mentioned by Father Acuña), who either made it themselves or received it in barter (G, I, 127). On the other hand, in Bates's day the Indians living on the banks of the Tapajos were ignorant of curare, the drug being prepared only by tribes living on the rivers flowing into the upper Amazons from the north (HWB, 187). As a matter of fact the Rio de Solimoes, *i. e.*, upper

Amazon, was already known as the River of Poisons . . . on account of the envenomed arrows, the most usual weapons of those nations that live upon its banks (LCo, 67).

122. Curare was manufactured in Schomburgk's presence. He described the procedure, which, apparently, is unaccompanied with any danger, even the steam arising being harmless. This took place in a new house, with new pots, the Indian making his special fire, bringing his own water, and allowing no assistance from anyone else. Both before and after he submitted himself to a strict fast, further essential conditions being that while the cooking process was going on no woman, maid, especially a pregnant woman, must come near the house, nor must his own wife be in the family way. He asked Schomburgk during the course of the preparation not to eat sugar cane or sugar (SR, 1, 445-447). This restriction, depending upon his wife's condition, had already been noted by Waterton, with whom an Indian agreed to make some for him, but the next morning declined having anything to do with it, alleging that his wife was with child (W, 94). Somewhat analogous to the sugar taboo imposed upon Schomburgk as a spectator is that of the Indian on the upper Parou, Cayenne, who only commenced to free the roots of the *Strychnos crévauxi* out of the ground with a stick after satisfying himself that each of the spectators had chewed and swallowed the capsicum given them by the medicine man (Cr, 269-271). Schomburgk was informed that, if made properly and kept carefully dried, curare would retain its toxic properties for many years, and that if lost they could be restored with the juice of the poisonous manihot [cassava] root (SR, 1, 445-447). Moisture would also seem to have a deleterious effect on the drug, Waterton noting that the Indians keep it in the driest part of the hut, and from time to time suspend it over the fire to counteract the effects of dampness (W, 92-93). Among the Maionkong, Guinau, Uaupes, and the Pauixiana weak poison is used for shooting and stupefying the *Rhamphastos* (toucan), which supplies the feathers used for the cloaks, etc. After recovery these may, perhaps, be shot at and robbed again (SR, 1, 403). There are other references in the literature to this temporary loss of consciousness by the animal shot, but no explanation as to whether the curare so employed depends for its strength upon original manufacture or subsequent treatment. To apply the poison the extremity of the dart or arrow is dipped once or several times into it, according to the strength required (Cr, 555), but to make the juice adhere better small crossed incisions are made on the implement (Cr, 269-271). The Trio would seem to have a brush, specially made from monkey hair, for smearing the poison onto the dart (GOE, pl. v, fig. 13). There is Bancroft's statement that the Indians con-

stantly moisten the points of their poison arrows when overdry with the juice of lemons (BA, 295). Salt rubbed into the wound and taken internally, sugar, and the "juyce of the leafe called Uppee" (HR, 384) are among the alleged antidotes.

123. Dance makes mention of two other poisons for arrow points—the heauru-canali with bluish papilionaceous flowers and clusters of pease-pods, poisonous roots, and the hurubuh, its Akawai name, similar to the hog tannia. The root of the latter is grated and placed in water to get the starch, which, after being dried, is used on the points of arrows for large birds (Da, 332). Schomburgk speaks of the Maopityan having an arrow poison, but which is far from being as powerful as curare (SR, II, 472). The Warrau accuse the Akawai of making a deadly poison from a dried and finely pulverized fish, *Chelichthys psittacus* (SR, II, 456), but there is no evidence to show whether it was used on arrows (sec. 734). In Surinam it was said that arrows were poisoned with the juice of a tree called mancélínier, which grows on the seacoast (FE, 53). Also on the islands, Laborde mentions that the ends of certain arrows were poisoned with the juice of a tree called manceniller, and the fruit mancanille, a name given by the Spaniards because the fruit resembled apples (PBR, 244). Rochefort likewise noted the mortal poison made from the juice of the mancenille by the Island Carib for their fighting arrows (RO, 526). Barrère in Cayenne speaks of fighting arrows being poisoned with the fruits of cururu [?curare] or with the milk of a tree that they call pougouly (*Ficus venenata*), which gnaws and inflames the flesh (PBA, 169). The islands in the Rappu Rapids, Essequibo River, and a river nearby are so called from the existence of a peculiar species of bamboo, not being found farther north. Pieces of the stem of this bamboo are dried and used by the Indians (presumably Makusi) as arrow-heads, which are said to possess similar properties to the far-famed woralli poison. They split up the stem, and dry the pieces over a fire, and then shape them into lance heads, which they fasten on the ends of arrows. Wild animals wounded by these arrows are at once completely paralyzed, and in that condition easily dispatched. The bamboo is tall, growing singly and not in clumps from a mass of matted roots like the common bamboo (BB, 99). It is said to be the *Nastus latifolia* (ScO, 64), *Guadua latifolia* Kth. (SR, I, 338). Schomburgk makes mention of a particular kind of bamboo alleged to possess poisonous properties used as an arrow point for shooting tapir (SR, I, 425). In previous days Gumilla, on the Orinoco, had also reported a poison bamboo for killing alligator (G, II, 220). If we are to believe Stedman, the markuri, a tree so-called by the negroes, is truly formidable on account of its poisonous qualities,

which are of such a subtle nature that the very smoke of this wood when on fire is fatal to those animals that receive it into their lungs. This is always seen to grow by itself, as it infallibly kills everything around it, even the slaves refusing to cut it down on the plantations, so much are they afraid of touching or even coming near it. . . . I have been told that some of the Indians render their arrows fatal by dipping the barbs of them in its sap (St, II, 182). But, on the other hand, markuri is the Guianau name apparently for curare poison (sec. 120).

124. The Makusi Indians, says Waterton, have shown ingenuity in making a quiver to hold their blowpipe arrows. It will contain from 500 to 600. It is generally from 12 to 14 inches long and in shape resembles a dicebox used at backgammon (pl. 35 B). The inside is prettily done in basketwork, with wood not unlike bamboo, and the outside has a coat of wax. The cover is of one piece, formed out of the skin of the tapir, deer, etc. Around the center there is fastened a loop large enough to admit the arm and shoulder, from which it hangs when used. To the rim is tied a little bunch of silk grass, and half of the jawbone of the fish called pirai, with which the Indian scrapes the point of his arrow. Before he puts his arrows into the quiver he links them together by two strings of cotton, one string at each end, and then folds them around a stick which is nearly the length of the quiver. The end of the stick which is uppermost is guarded by two little pieces of wood crosswise, with a hoop around their extremities, which appears something like a wheel, and this saves the hand from being wounded when the quiver is reversed in order to let the bunch of arrows drop out (pl. 35 B). There is also attached to the quiver a little basket to hold the wild cotton which is put on the blunt end of the arrow (W, 96-98). This description of the Makusi quiver for blowpipe darts affords a good basis for comparison with other types met with in the Guianas. The quiver is usually made of neatly plaited strips of maranta stalks (HWB, 295), or probably other material, and covered more or less, sometimes on its whole surface, with "pitch" or resin and wax, the karamanni. The bottom is either a thin disk of wood or a piece of calabash, usually also covered with the resin, etc. On the upper Rio Negro—certainly on the Içana and Caiary—the pitch forms an outer covering for perhaps the lower third of the article (pl. 35 C), the middle third being enveloped in an additional and finer plaitwork showing special patterns. These would appear to have no covers. Among the Katapolitani (Arawak stock) of the Içana a quiver was obtained with the inner of these two layers of basketry replaced by a thick wooden tube (KG, I, 97). The Buhágana (Betoya stock) of

the upper Apaporis and Tiquie, on the other hand, have the entire article made of a beautiful red wood, which takes on a fine polish. The cover, however, is plaitwork encased in pitch.

The Trio quiver is made of bamboo, engraved in various patterns, with a deerskin cover (GOE, pl. v, fig. 12; pl. xi, figs. 18, 19, 22). With the Içana and Caiary coverless quivers just mentioned the darts are protected by placing them points downward into a loose ball of bast fiber (KG, I, 98). With the Buhágana ones palm-leaf pinnules or the pliable broad stems of a certain grass are bent over and tied close to one another with twine, so as to form a miniature roll-up mat, in the coils of which, after the style of a case of instruments, the darts are firmly secured. When all is thus rolled together the mat so closely fits the inner sides of the quiver that the downward projecting points do not touch the bottom, whereas by means of a string it can be pulled out in its entirety as required (KG, I, 329). Schomburgk has recorded that the little basket which contains the cotton has a shape peculiar to, and indicative of, each nation (SR, I, 425-426); and within certain areas this may be true. Its construction is described elsewhere (sec. 417). On the other hand, as in the upper Rio Negro quivers, where the darts are carried already cotton-plugged, no special basket of any description is required. The cotton is obtained from the *Bombax globosum* (SR, I, 425-426), the *Eriodendron samaüma* (HWB, 295), etc.

125. The bow, shimarabo (Ara.), sumára (Wap.), uraba (Mak.), etc., is made from at least half a dozen different timbers, only two of which, I believe, have been identified. Among the former are the tibikushi and washiba of the Arawak and the tari and wamara of the Makusi and Wapishana. The identified timbers are the purple-heart (*Copaifera pubiflora*) and the letter-wood or snakewood (*Brosimum aubletii* Poepp & Endl.). The latter, also known as burakura, burukuru, or burokoro, is a timber of great beauty when polished, and thus the finished weapons of this material have come to be wrongly regarded as intended more for ornament than for use. Letter-wood constituted no unimportant article of trade between the Guiana and Brazilian Indians. A large supply comes from the forests at the back of the Canuku and Pakaraima Mountains. There must also be a source of supply somewhere in the Taruma country, because these people sell it to the Wapishana, who in turn trade it to the Makusi. On the upper Rio Negro a species of *Tecoma* is said to be employed (KG, I, 104). On the islands the Carib used the latanier palm (RO, 81). The outer surface of the Arawak, Carib, Akawai, Patamona, Makusi, and Wapishana bow is either concave or

straight (fig. 42 A, B); the inner is strongly convex. The bow tapers with this section from the center to the ends, which are abruptly truncated to terminate in two tips with a circular section. In the Oyana implement (GOE, pl. v, fig. 2) the outer surface is slightly convex, while the inner is strongly convex (*H*), whereas along the upper Rio Negro, e. g., the Içana-Caiary district, the bows are more or less concave on the inner and strongly convex (*C*) on the outer side (KG, i, 104).

126. The time taken to make a bow will vary from a few days to several months, apparently all depending upon the timber employed. For instance, the material used by the Warrau and Arawak is soaked two days and straightway cut into shape. On the other hand, the Wapishana, in the case of letter-wood, I believe, will take much time, trouble, and patience in the manufacture of their weapons. After the tree is felled it is left for some months in the shade. It is

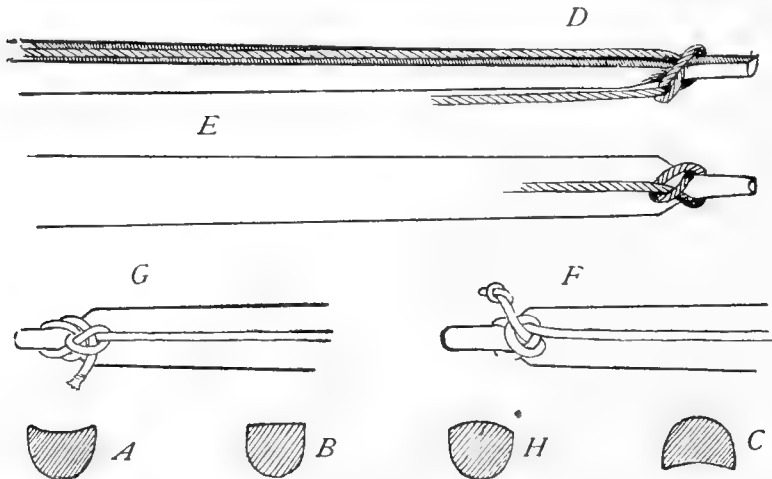


FIG. 42.—Bows; details of construction.

then split, covered with beeswax, and kept under the house roof, the reason given being that by this means the air does not get in and dry the wood too quickly, which would render it liable to crack. The bow is now roughly shaped by rubbing it back and forth across the edge of a large piece of sharp quartz, and finally smoothing it down with shell, stone, tooth, leaf, etc. (JO). Bows may be glossed (sec. 794).

127. In those cases where the outer surface of the bow is straight or concave the whole unused portion of the bowstring (fig. 42 D, E) usually lies along it. The latter may be sufficiently long to allow of its being run almost the whole length of the bow and back again, in addition to being wound round it in three or four places. The looped end of the string is attached by a single (F) or double (G) loop. On making inquiry to confirm my preconceived opinion that

so inordinately long and yet so carefully wound a string was intended to strengthen the bow, I found myself in the wrong; the Indians assured me that they used a long string only because, should it happen to be overstretched and broken during the course of the chase, there would be another ready to hand. To string the implement it is pressed vertically on the ground with the left hand at the same time that the left knee presses it outward. While thus bent, the right hand twists the string a few times to render it more taut, and then slips the loop over the bow tip. The bowstring is made either of kuraua twine, at times of tucum leaf-fiber, or of the inner bark of trees called tururi (ARW, 338).

128. Arrows, *shimára* (Ara.), *bail* (Wap.), *parau* (Mak.), etc., may be described as consisting of a head, shaft, and nock. Wood, bone, or "spurs" of the sting ray are used as arrowheads. The wood employed may be that of the yarri-yarri or lancewood, the *kokerit*, the bamboo, etc. Turtle, monkey, fish, deer, and other animals perhaps supply the bone, but both wood and bone with advancing civilization have been more or less gradually replaced by iron. Im Thurn was informed by his Carib captain that in his youth the latter had seen bone, shell, or stone pointed arrows in common use. He himself reports having on one occasion seen stone-headed arrows in the possession of some Arekuna (IT, 241), but subsequently admits (IT, 423) that he only saw them used as toys. More probably what this traveler noted were the flakes (sec. 339) out of which the chips for the stone graters are obtained, applied to this purpose, for the Arekuna were certainly manufacturers of these household requisites. St. Clair has this to say: In the smaller end (of the arrows) they (Corentyn Arawak) fasten a piece of hardwood, which they tip with bones or flints in various forms according to the animal or bird against which the arrows are intended to be used (StC, I, 331-332). The use of the term "flints," of which, strictly speaking, there are none here, is suspicious; and it is certainly very extraordinary that no other record at first hand is forthcoming of the application of shell or stone to such a purpose throughout all the Guianas. Spurs of the sting ray were fixed on the Orinoco war arrows which would cause a wound either fatal or very difficult of cure (G, II, 205). In Cayenne, on the Parou River, such arrow points were destined for the hunting of the couata monkey (Cr, 308), and in our own colony they were employed by Makusi (SR, II, 38), etc. St. Clair speaks of war arrows among the Corentyn Arawak having the bone of a particular fish dipped in poison (StC, I, 331-332), while Barrère in Cayenne also makes record of fighting arrows being poisoned (sec. 123). It is matter for surprise that the Guiana Indians did not make far more frequent use than they apparently did of the curare when engaged

in fighting their enemies. Curare-poisoned arrows are used in hunting, but particularly for killing monkeys, who, when wounded with unpoisoned arrows, usually run to the crotch of a tree, from whence they do not fall even when dead; whereas, when pricked with a poison arrow, their limbs become useless and they fall to the ground (BA, 306). The arrowhead is known as tishiri (Ara., head), tabai (Wap., leg), pichi (Mak., foot), etc.

129. To fix the iron or bone barb in position a slot is run along and about three-quarters through the wooden head. To be properly done in the orthodox manner this is a somewhat tedious process, because a series of holes with a deer-horn drill has first of all to be made in the length required, and the intervening material then picked away with the same instrument (fig. 43). Once completed, the iron or bone is wedged in the groove, the whole bound round with kuraua twine, and finally covered with some form of native cement (sec. 19).

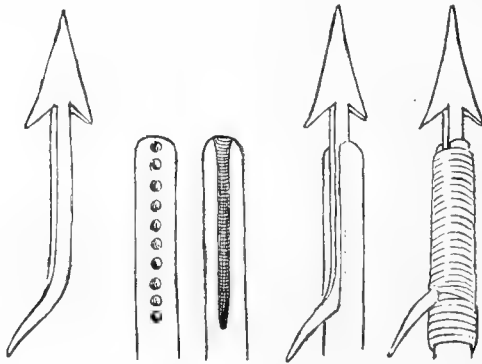


FIG. 43.—Arrows: Method of fixing barb in position.

130. The arrow shaft, *ili* (Ara. name of the reed), *baili* (Wap.), etc., is usually made from a piece of arrow reed, the *Gynerium saccharoides*, a plant which may be cultivated by the Indians especially for the purpose, e. g., on the upper Moruca. Near Johanna, Berbice, Pinckard reports having seen in the neighborhood of

the huts some of the fine reeds growing which are used by the Indians for making their arrows. They appeared to have been planted about the village for the convenience of furnishing a ready supply (Pnk, I, 525). The plant is cut into lengths much longer (from 12 to 18 inches) than will be subsequently required, and after being made into bundles are left to dry for weeks, even months, under the house rafters, etc. It is never made to scale or by measurement with a pattern, but as will be shown directly, according to its own special requirements. Once sufficiently dried, a couple of inches or so are cut off from the smaller end, because, what with all the time taken during the drying process, some insect, etc., may have got into the pith. The extremity is tied round and round with string to prevent its bursting when the long, tapering point of the nock is now gradually pushed down, jammed, and screwed into the very center of the cut surface. When this aperture is at last completed and the hardwood peg loosened and extracted the latter is smeared with karrimanui or turara cement and with very firm pressure reinserted. When this is fixed the string

is removed, and the end of the arrow shaft shaved down into a nice slope, which is then subjected to considerable pressure, with the re-

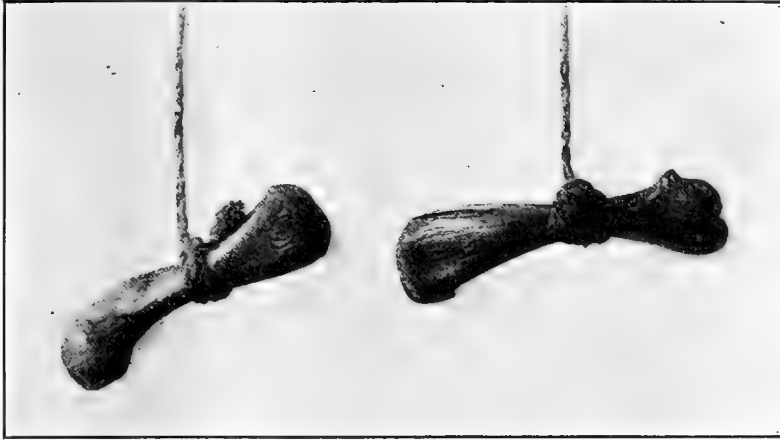


FIG. 44.—The arrow-shaft tightener.

sult that its diameter is appreciably diminished and the nock gripped as tightly as possible. There is a special tool, the arrow tightener,

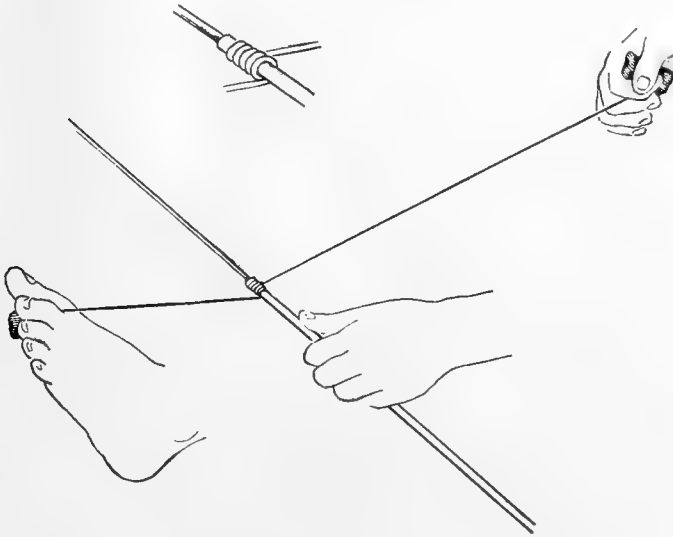


FIG. 45.—Method of using the arrow-shaft tightener.

shimara adikuda-kuanna (Ara.) or skliribié (Wap.), by which such pressure is effected. Crévaux mentions it as being found in the pegalls of the Cayenne Indians (Cr, 168). This is composed of a very

strong kuraua twine attached at its extremities to two stumpy turtle bones (fig. 44). Winding the central portion of the string a few times around the arrow shaft, pressure is exerted by holding one bone between the big and first toes and pulling the other in the right hand at the same time that the left hand keeps rolling the shaft

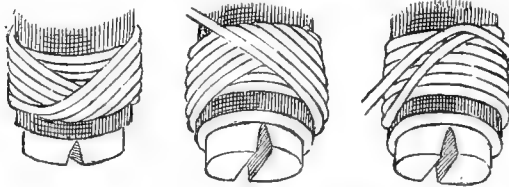


FIG. 46.—Cotton decoration of proximal extremity of arrow shaft.

uniformly backward and forward (fig. 45). This completed and the projecting portion of unnecessary nock cut away, the compressed portion of the shaft is overcast with fine cotton thread, often

in a "turk's head," or more or less ornamental patterns, apparently varying with the fancy of the individual (fig. 46), and as much of the projecting nock as is not required is then removed. To obtain the correct length of shaft its free end is made to rest more or less horizontally upon the left forefinger, but under the thumb, where it is flicked downward and inward with the right

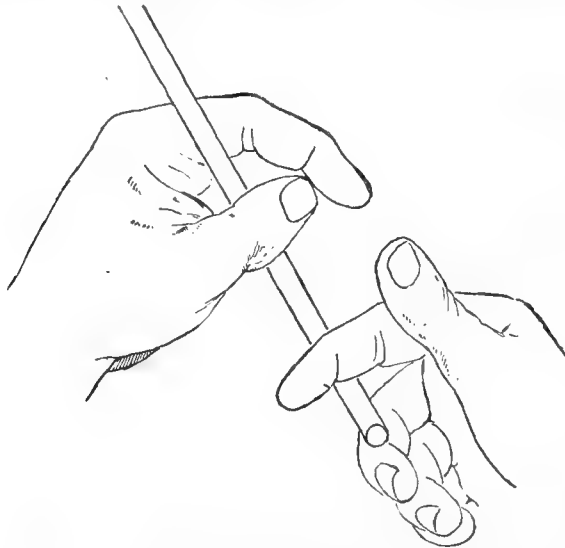


FIG. 47.—Gauging the proper length of the arrow shaft.

forefinger (fig. 47). The remainder of the shaft will visibly shake or vibrate, but less and less according as the length is shortened by cutting away a couple of inches or so at a time. When finally there is no shaking following upon the flick, the proper length has been obtained. The insertion of the wooden peg to form the arrowhead is now carried out on practically identical lines as that of the nock, and this end of the shaft more or less decorated with cotton thread,

which is finally waxed with turara or karrimanui cement. This decoration assumes one of at least three forms (fig. 48): The simple roll (*a*), the crossed (*b*), or the composite pattern (*c*), i. e., a combination of the other two, a crossing covered by a roll. Now comes the feathering on lines described elsewhere (sec. 83), care being taken that the axes of the arrowhead, the feathers, and the notch for the bowstring all lie in the same plane.

131. As variations from the method of arrow making above described, it is interesting to note that I have often seen Warrau and coastal Arawak fixing the head of the weapon previous to the nock, and as frequently watched them inserting both head and nock pegs into the shaft after undergoing special manipulation to receive them. This preparation consists of a pit or hole made by splitting the end of the shaft, opening out the split wedgewise and picking out the

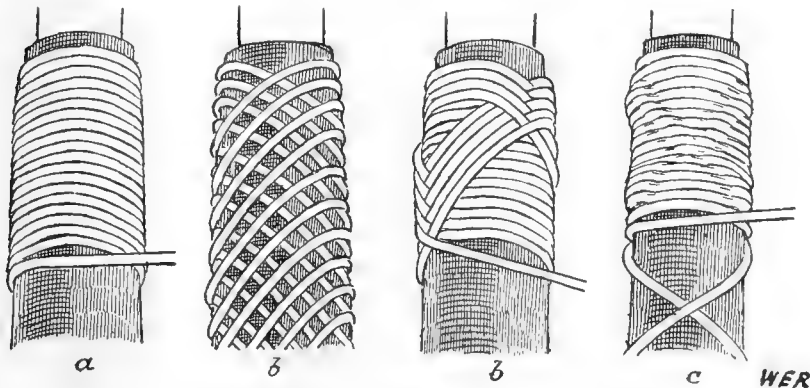


FIG. 48.—Cotton decoration of distal extremity of arrow shaft.

soft parts. But whether this variation is the lazy man's method or dependent upon the shaft being insufficiently or too much dried, I am unable to say.

132. Arrows are either without feathering or two-feathered. There are records of their having been three-feathered. On the upper Parou River (Cayenne) it has been stated that when an arrow is intended for shooting into the air, it is fitted with feathers; when for the water, it is without them (Cr, 277). A similar statement has been made for the Rio Negro (KG, II, 31), and I have found it true for the Pomeroon and Moruca. Indeed, the generalization holds good, more or less, throughout the Guianas, although, inter alia, it will be seen that feathers may or may not be fixed on identical arrows (sec. 144), even by members of the same tribe. Thus, with the Wapishana, the tukutchi arrow for shooting fish at close range may be feathered or not (sec. 139). When feathered, the two feathers are fixed on with fine cotton thread or with kuraua fiber, according to

four different patterns—the diamond, claw, bar, and spiral (sec. 83). The first is a Moruca Arawak pattern, the akuledahu, so called after its resemblance to the “hook” used for catching alligators. The claw is also an Arawak pattern. They speak of it as the baridi-óbada, or chicken-hawk claw. Carib, Akawai, Makusi, Wapishana, and Warrau employ the third type, fixing the feathers with two or three ties or bars. This method is not considered so good as the others, but takes a shorter time to elaborate, and, hence, for this reason only, may be occasionally adopted by the Arawak. The spiral is the quickest but laziest pattern to follow. The actual feathers employed for feathering are from the wing and tail of the powis and marudi. The Wapishana and Makusi may, in addition, use those of the carrion crow, harpy eagle, etc. On the Uaupes River and its tributaries, says Wallace, the lighter arrows are made for shooting birds and other small game, and these alone are feathered at the base. The feathers generally used are from the wings of the macaw, and in putting them on the Indian shows his knowledge of the principle which is applied in the spirally grooved rifle barrel. Three feathers are used, and they are all secured spirally, so as to form a little screw on the base of the arrow, the effect of which, of course, must be that the arrow revolves rapidly in its onward progress, and this no doubt tends to keep it in a direct course (ARW, 338–339).

133. The nock, tissa (Ara.), imota (Mak.), idikep (Wap., buttock), etc., is made of any hard kind of wood cut to a length much longer than will be ultimately required. After being cut into a gradually tapering point it is inserted into the arrow shaft as already described. A natural form of forked nock is met with in the poison arrows of the Guariúna of the Yapura (KG, II, 316).

134. For descriptive purposes it will be found convenient to classify the arrows by the nature of their heads, according as they are made of one (simple) or more (composite) pieces. The former class comprises pencil and jagged groups; the latter includes fixed and detachable (harpoon) divisions. The fixed division embraces pencil, lanceolate, knobbed, and barbed varieties. These may be classified as follows:

Head simple: Pencil (sec. 134), jagged (sec. 135).

Head composite and fixed: Pencil (sec. 136), lanceolate (sec. 137), knobbed (sec. 138), barbed (secs. 139, 140, 141).

Head composite and detachable: Harpoon arrows (secs. 142, 143, 144).

Among examples of the simple pencil group are certain poison arrows of the Siusi (Arawak stock) of the Aiary River (fig. 49 A), where the head is made of a single piece of some hard, black palm wood and forms about one-fifth of the implement, which

reaches a length of from 160 to 165 cm. It terminates in a fine, gradually tapering point, the distal extremity of which is streaked with curare, and is incised with five rings, to insure that the head may snap in the wound when the animal makes its escape into the thicket. The weapon is not feathered. The complete outfit consists of seven of such arrows protected in a common casing. This is about 20 cm. long, has the shape of a truncated cone, and is made of a separate casing of leaf or reed for each arrowhead, tied together with fiber in such a way that six of them inclose the seventh, their interstices being then filled in with pitch. Over the whole are now wrapped certain tough leaves, tied round with fiber, and the farther end protected with pitch, so as to prevent the arrow points piercing the cover (KG, I, 103).

135. The ashiritai arrow of the Arawak (fig. 50) has a tapering wooden head, more or less oval in section, and jagged on either side into more or less definite barbs. The name indicates any sharp point in reference to the jagged edges. It is employed for shooting big birds, as marudi, powis, and maam, and is feathered. A similar arrow is used by Carib, Makusi, Wapishana (who call it tarau), and is practically identical with a form described by Pinckard from the Indians at Berbice: A thin piece of hardwood, pointed and cut in many notches at the sides is fastened to the reed and forms the end of the arrow (Pnk, I, 487). So, also, in Cayenne, among the Ojana

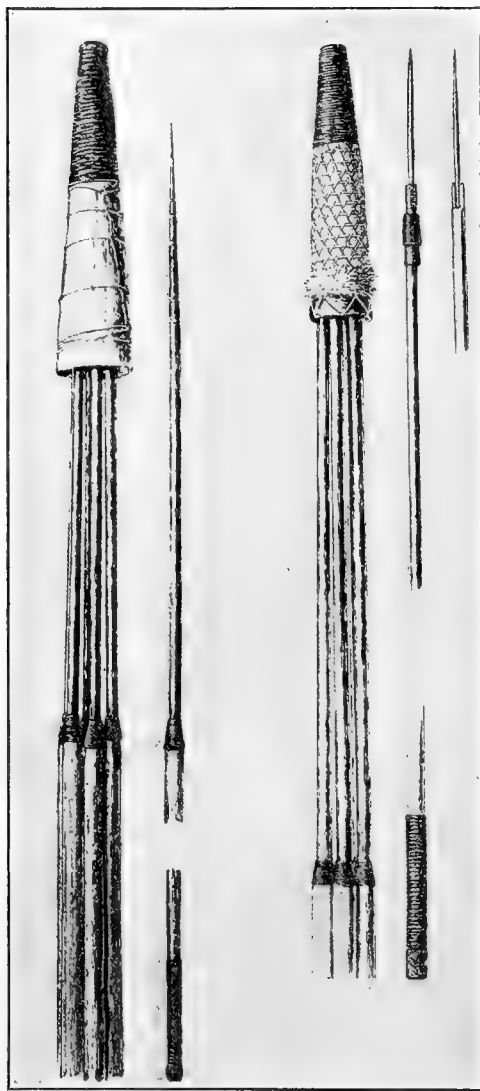


FIG. 49.—Arrows: A, Head simple, a pencil; B, head composite and fixed, a pencil. (After Koch-Grünberg.)

of the Parou River, the arrows for shooting birds or monkeys have a wooden dart armed with projections (*piquants*) turned backward (Cr, 277). A specimen is also figured by de Goeje (GOE, pl. v, fig. 7).

136. As examples of the pencil variety of composite arrowhead (fig. 49 B) there are the poison arrows of the Kobéua (Betoya stock) and Umáua (Carib) of the upper Rio Negro. Their heads consist



FIG. 50.—Arrow; head simple, jagged.

of a well-polished dark red or black timber, into the extremity of which a pointed piece of hard palm wood is apparently loosely inserted. The whole of this palm splinter is covered with curare and occasionally incised with rings. The casing, to hold an outfit of seven, only differs from the one already described among the Siusi in more careful execution and in outside decoration which consists of a plaitwork. These arrows are not feathered (KG, II, 132).

137. In the lanceolate variety the head, which varies both in size and material—iron, bamboo, bone—is in its iron stage employed by

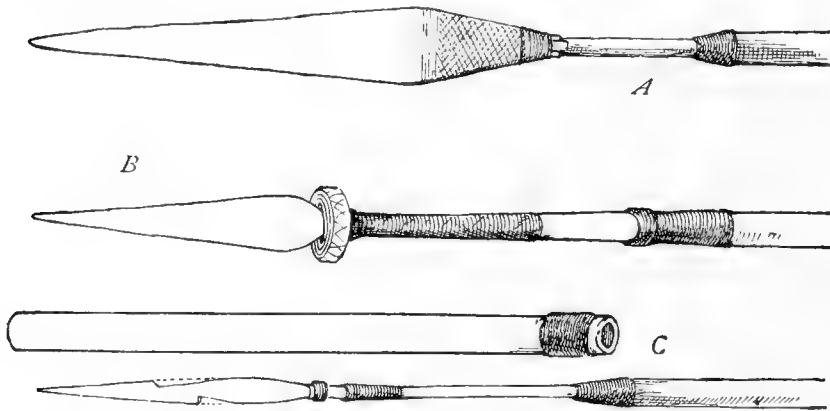


FIG. 51.—Arrow; head composite and fixed, lanceolate.

Arawak, Wapishana, Warrau, Carib, Makusi, and Akawai on arrows mainly intended for big-game shooting, as the bush hog, tapir, and jaguar. With the Pomeroun Arawak this shiparari arrow, so named from their word for a spear, is wound just below the base of the head with a coil of mamuri in the form of a circular plate, with a diameter greater than that of the iron blade (fig. 51 B). The coil is fixed in position with a thick strand of kuraua fiber. The object of the plate is to make the arrow rebound after striking, and so prevent its remaining in the flesh only to be broken as the animal rushes headlong. There is no disk or similar contrivance on the iron chiparari of the Wapishana and Makusi; the names are practically identical. These

lanceolate arrows are feathered. Lanceolate bamboo arrows are used by Wapishana (A) and some of the Makusi for deer and jaguar. The latter speak of them as rappu, the name of the bamboo, which is said to be poisonous (sec. 123), the former as wad. Lanceolate bamboo-headed arrows are recorded from among the Trio and Oyana of Surinam (GOE, pl. v, fig. 4). The former call them pala; the latter kurmuri.

From our own colony, Waterton was the first to describe an apparently lanceolate composite arrowhead made of wood and poisoned. It differed from that of the Siusi, Kobéua, and Umáua in that, instead of a special casing to hold seven arrows, there was employed a special box or quiver to hold a number of heads for a single arrow. The arrows, he says, are from 4 to 5 feet in length, made of a yellow reed without a knot or joint. . . . A piece of hardwood about 9 inches long is inserted into the ends of the reed and fastened with cotton well waxed. A square hole an inch deep is then made in the end of this piece of hardwood, wound tight with cotton to keep it from splitting. Into this square hole is fitted a spike of coucowrite (kokerit) wood, poisoned, and which may be kept there or taken out at pleasure. A joint of bamboo about as thick as your finger is fitted on over the poisoned spike to prevent accidents and to protect it from the rain, and is taken off when the arrow is about to be used. Lastly, two feathers are fastened on the other end of the reed to steady it in its flight. They take care to put the poison on thicker at the middle than at the sides, by which means the spike retains the shape of a two-edged sword. . . . About a quarter of an inch above the part where the coucowrite spike is fixed into the square hole he cuts it half through; and thus, when it has entered the animal, the weight of the arrow causes it to break off there, by which means the arrow falls to the ground uninjured; so that, should this be the only arrow he happens to have with him, and should another shot immediately occur, he has only to take another poisoned spike out of his little bamboo box, fit it on his arrow, and send it to its destination; for, besides his bow and arrows, the Indian carries a little box made of bamboo, which holds a dozen or 15 poisoned spikes 6 inches long. They are poisoned in the following manner: A small piece of wood is dipped in the poison, and with this they give the spike a first coat. It is then exposed to the sun or fire. After it is dry it receives another coat and is then dried again; after this, a third coat, and sometimes a fourth (W, 101-102). Appun speaks of certain Wapishana being all armed with bows and arrows, who carried besides several poisoned arrowheads in a bamboo quiver, with a leather cover, hanging down their backs (App, II, 562). Among the Makusi I came across a poisoned arrow, with bamboo cover (fig. 51 C), which bears very close correspondence with Waterton's description, save that instead

of the base of the head being 9 inches long it is barely half as much. The signs of recent cutting also show that, subsequent to the smearing with the poison, the lanceolate extremity has been secondarily and badly trimmed into a jagged one.

138. Among the knobbed variety perhaps the best example is the maroa (Ara., anything round) of the Arawak (fig. 52 B), an arrow with composite rounded head, made of any hardwood, and used for small birds only. It is feathered. In the case of these Arawak specimens, however, I use the term "composite" advisedly, because of the knob being often cut out in one piece with the arrowhead. I have seen similar ones with the Patamona (A), and Stedman has described the same from Surinam (St, I, 395). So, also, on the upper

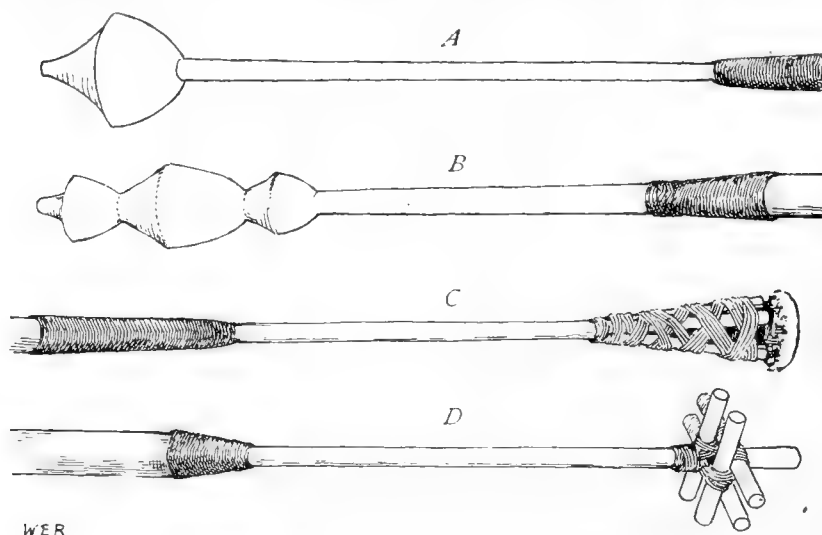


FIG. 52.—Arrow; head composite and fixed, knobbed.

Parou River, Cayenne, the Indians tip their arrows with a sufficiently heavy knob carved out of a bone or an awarra seed (Cr, 277). The Taurepang have the knob made of the butt end of a deer horn, an interesting adaptation of a natural form, wedged into the split extremity (fig. 52 C). Included in this knobbed variety is the tamaría or tapara of the Makusi and Wapishana, respectively, with the knob formed of four crosspieces (D). Different views seem to be held as to the object of these knobs. Some arrows have blunted heads, instead of points, about the size of a large chestnut, like what our ancestors called bols; with these they do not kill but stun the macaws, parrots, and small monkeys, so that they can take them with their hands; soon after which they recover and are sent alive to Paramaribo (St, I, 395). The Makusi and Wapishana assured me that they used this arrow with intent to kill the bird; while the

Taurepang just as positively declared that the idea of the deer horn was to increase the weight of the head so that when shot to a height in a tree the arrow would be sure of falling to the ground again.

[NOTE.—This latter view is held by Nordenskiöld, from the Gran Chaco, where the knob is only intended to prevent the implement from becoming stuck in the twigs of the trees, and so getting lost, should it miss the mark (NOR, 53).]

139. Composite barbed arrows show so extreme an amount of variation that it becomes a matter of no small difficulty to group them, except, perhaps, by comparison with certain particularized ex-

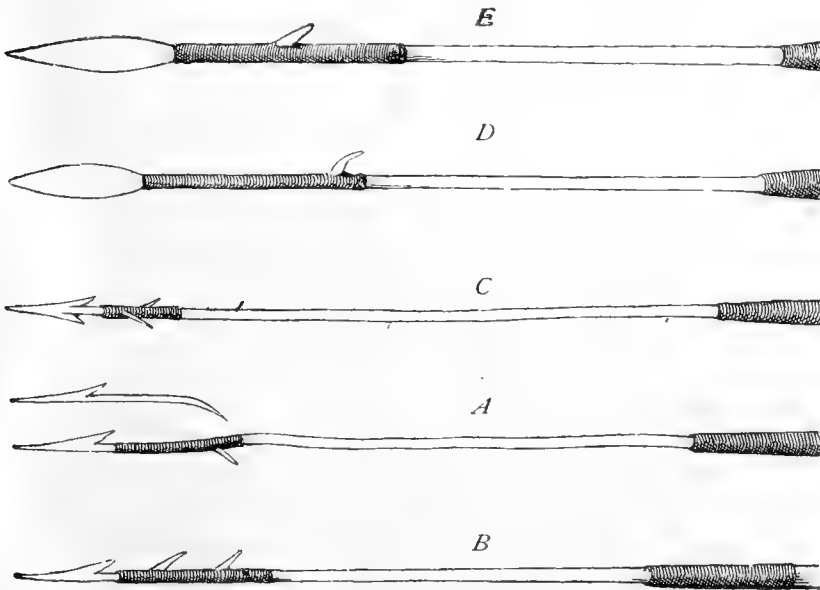


FIG. 53.—Arrow; head composite and fixed, barbed.

amples of some well-known tribe—the more advanced the better. The Arawak seems to lend itself especially to the purpose. The oyawakashi (Ara., meaning unknown) is made of a piece of flat iron with a single barb below in the same plane and on the opposite side of the single barbed tip (fig. 53 A). It is employed by Arawak, Carib, and Warrau for any kind of fish, and is not feathered. The maruari-dahe (Ara., shark's fin), also of iron, is like the oyawakashi, but has one or two barbs additional in the same plane and on the same side as the single tip (B). It is used for any kind of big fish in fresh or salt water, and is not feathered. The Makusi and Wapishana tukutchi (a claw), for shooting small fish, is identical with the Arawak oyawakashi. In one Wapishana specimen I have seen a double-barb tip, but I believe this is quite exceptional. It may or may not be feathered. The yatama-idak (Wapishana) or panachika

(Makusi) has a double-barb tip with two underlying barbs opposite one another and at right angles to it (C). Of the many forerunners of this oyawakashi type there is the present-day bone-tipped pointed fish arrow of the upper Rio Negro (KG, II, 33), and the lanceolate bone and now iron arrow, tubokkeng (D, E) used for deer, etc., by the Taurepang. Another is the fish arrow without feathers, with a barb made from the radius bone of the couata monkey, described by Crévaux, from Cayenne (Cr, 277). Another may have been the kind mentioned by Pinckard, from Berbice. The common arrow employed in their wars or for the purpose of killing game is nearly 6 feet long, made of a peculiarly straight and fine reed, strengthened at the point with a sharpened bone having a barb on one side. It is feathered (Pnk, I, 487).

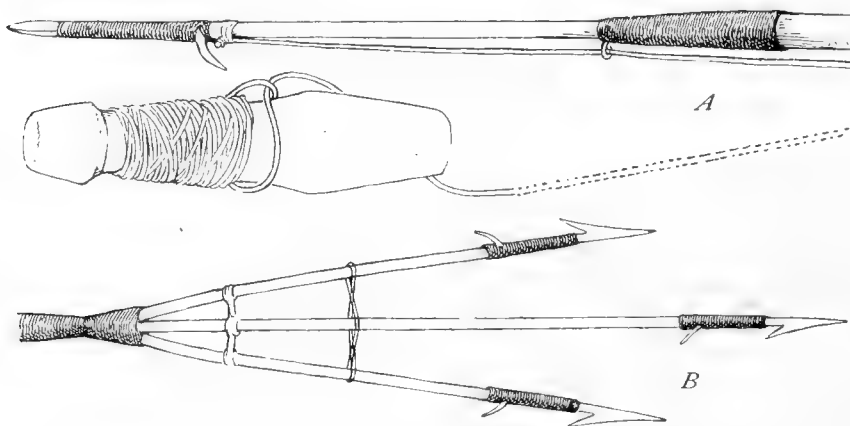


FIG. 54.—Arrow; head composite and fixed, barbed.

140. Closely related to this group is the Arawak *kassapa-aring* (i. e., turtle—belonging to), with a pointed iron tip and single underlying barb, made out of the same piece (fig. 54 A). This arrow is interesting in that the shaft, which is feathered, is connected with a wooden float (*to-yuranni*) by means of a long cord. The cord is firmly attached just below the barb and is passed through two loops—one at the distal end of the shaft, the other just above the nock. When the creature (sea turtle) is struck, the float upon the surface indicates the direction that it has taken.

141. The *sarapa* is the Arawak name for a composite type of arrow made, like “Neptune’s trident,” from three hardwood prongs, each of them barbed, the middle prong projecting considerably beyond the other two. The barbs are of iron, with the lower extremity bent backward (fig. 54 B). The name *sarapa* signifies anything doubled, etc., and has accordingly come to be applied to a double-barreled gun. It is employed by Arawak, Wapishana, Warrau, Ma-

kusi, Trio, Oyana, Carib, etc., for fish, and, except in the Carib specimens, is not feathered. Barrère figures from Cayenne a feathered five-pronged arrow, the possiru, which was used both for fishing and for warfare (PBA, 169).

142. The atómo is one of the two harpoon arrows used by the Arawak (fig. 55 A). It has the entire harpoon made of iron, and consists of a double-barbed tip, below which are a pair of smaller barbs projecting in a plane at right angles to it. It is loosely fitted onto the head of the arrow and is connected by a strong cord of varying length with the shaft, around which it is wound when ready for use. This arrow is also met with among the Carib and Warrau, and is intended for any big fish, especially morokot, and for labba. It is not feathered. The ta-waut or sawato harpoon arrow (B) of

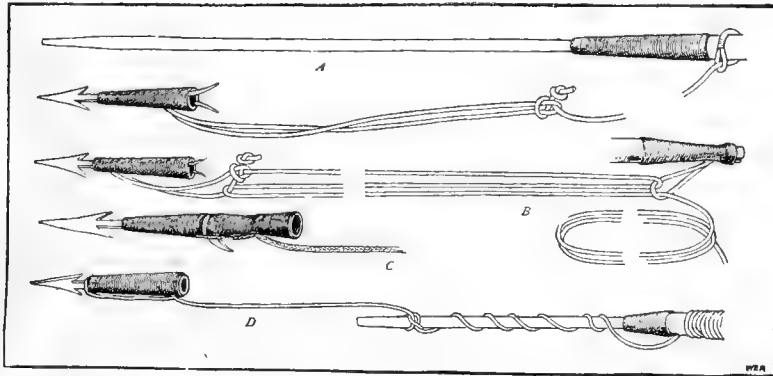


FIG. 55.—Arrow; head composite and detachable. Harpoon arrow.

the Wapishana and Makusi, respectively, is practically identical with the Arawak atómo. The only difference is in the method of attachment, etc., of the connecting rope, which is retained in the hand. In this case there is one loop on the butt end of the shaft and another on the harpoon. The rope is attached, tied, to the former, passed through the latter, back again through the harpoon loop, and again through the one at the shaft butt, whence, after being put up in convenient coils, it is finally tied onto the hunter's left forefinger or left wrist. This arrow is not feathered. It is employed for shooting the stronger kinds of fish—e. g., pacu.

143. The kartimera, the other Arawak harpoon arrow (fig. 55 C), has its entire head constituting the harpoon, which is formed of a wooden pencil with an iron double-barbed tip, and a single barb below projecting in the same plane. It is loosely fitted onto the shaft, which is peculiar in being made of moraballi, and is attached to it by a cord in the same manner as the atómo. Employed in hunting bush hog and other big game, the shaft, once freed, is intended to check the speed of the beast when rushing through the under-

growth after having been struck. It is feathered. The *tsararak* or *puya* (D) of the Wapishana and Makusi, respectively, is very like this Arawak *kartimera* harpoon arrow. Here, however, there is no lateral barb on the harpoon, which is socketed onto the head and not onto the shaft, which is of the ordinary grass reed. This arrow is feathered; the connecting rope is kept coiled on the shaft when shooting and it is intended for catching turtle. It is apparently identical with the *sararacca* harpoon of the Carib, etc. (SR, I, 307).

144. Allied to one or other of these, very probably, are the arrows described by St. Clair from the Corentyn Arawak as follows: Those (arrows) used for large fish consist of one barb (head), which is connected with the reed by a socket, to which it is held by a strong small cord. When the fish is struck it immediately dives and the point (head) of hardwood leaves the reed, which floats on the surface, by which means the Indians are enabled to haul the prize into their canoes. The Karabiss (Carib) nation use feathers on this kind

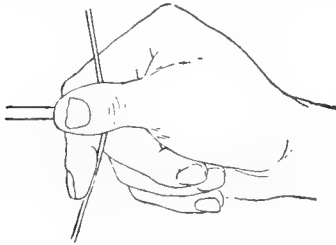


FIG. 56.—Arrow release.

of arrow, but not the Arawak (StC, I, 331–332). In Cayenne, before the introduction of iron, the Oyampi and Ojana used for “harpoons” a bone shaped to a point, usually a splinter from the radius of the *couata* monkey attached with tarred thread to the end of a piece of hard wood, after the manner of a hook (Cr, 148). Unfortunately, the context is none too clear

as to whether the author intends by “harpon” a spear or an arrow harpoon.

145. When shooting the arrow from the bow by hand it is the nock of the arrow held between the thumb and forefinger which is pressed onto the bowstring, i. e., Morse’s primary release; but I have noticed, both among the Pomeroon River Carib and the Arawak, that the string is often at the same time pressed upon by the index finger alone, a form of release (fig. 56) that does not appear to find place in that author’s classification. De Goeje speaks of the Surinam Trio employing secondary release (GO, 5). So far as the left hand is concerned, the arrow, lying on the inner edge of the palm and middle finger, rests between the bow and forefinger which is supposed to guide it. The Baniva (Arawak stock) of the upper Orinoco, like the Botocudo Indians, draw their bows with the feet (Cr, 531). On the upper Rio Negro, when fishing at night, the Indian will take his torch in the right hand and, holding the bow with the left, will draw the string and arrow with his mouth (KG, II, 31).

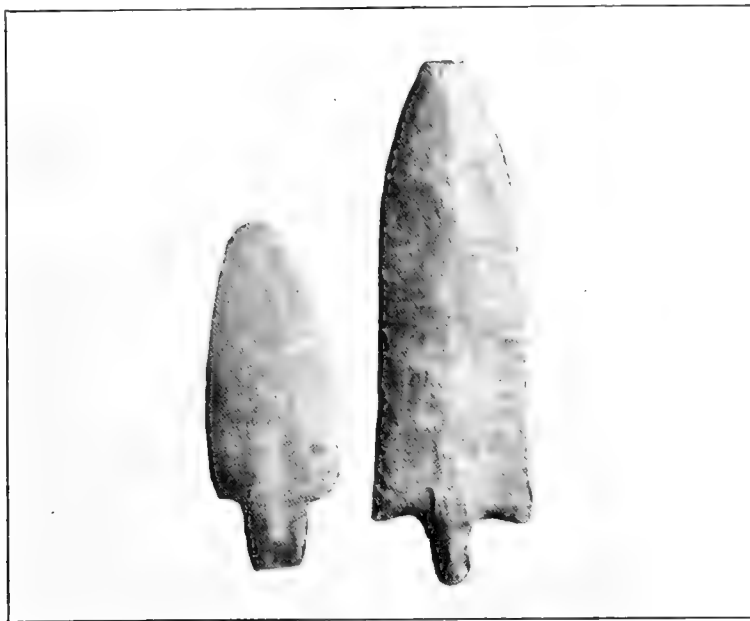
146. The requisite skill in shooting with bow and arrow is obtained only by years of practice. Among the Otomac the mothers

were accustomed to encourage their children in the art by making them shoot for any food they wanted (G, II, 89). Bernau makes the following statement about the Essequibo Indians: . . . They practice patiently until they attain some degree of dexterity. A flat piece of wood, or of the bark of a tree, is placed on the sand; they measure a certain distance, say 40 yards, and try again and again till they have found the proper angle of elevation; and having once hit the mark they seldom miss it afterwards. They then change the distance to more or less, till at last they become quite expert in the game (BE, 169). Certain it is that some of their games (sec. 609) also encouraged proficiency. I do not know of any scientific tests that have been made of their accuracy of marksmanship, but the following are certainly examples worth recording: Standing in a corial in motion, an Indian could shoot an arrow into a woodpecker's nest (WER, VI, sec. 277). Even when the river current often carried Schomburgk and his crew with the greatest swiftness, his Caribs seldom missed their aim with bow and arrow at the iguanas feeding upon the trees (ScG, 273). The swiftest bird in its flight, provided it has the magnitude of a crow, seldom escapes them (St, I, 401). The Indian stood up in the canoe with his bow ready bent, and as we drifted past the place, says Waterton, he sent his arrow into the cayman's eye and killed it (W, 215). The Amazon Indian can shoot an arrow into the air so as to fall vertically onto, and thus pierce, the hard carapace of the turtle (ARW, 324); and there are records of the practice in the Guiana folklore (WER, VI). [Note: I have often watched the North Queensland native shooting turtle in this manner.] In the times of the conquest Ojeda, at the Gulf of Darien, says that the savages could transfix a man with their arrows even when covered with armor (WI, 652).

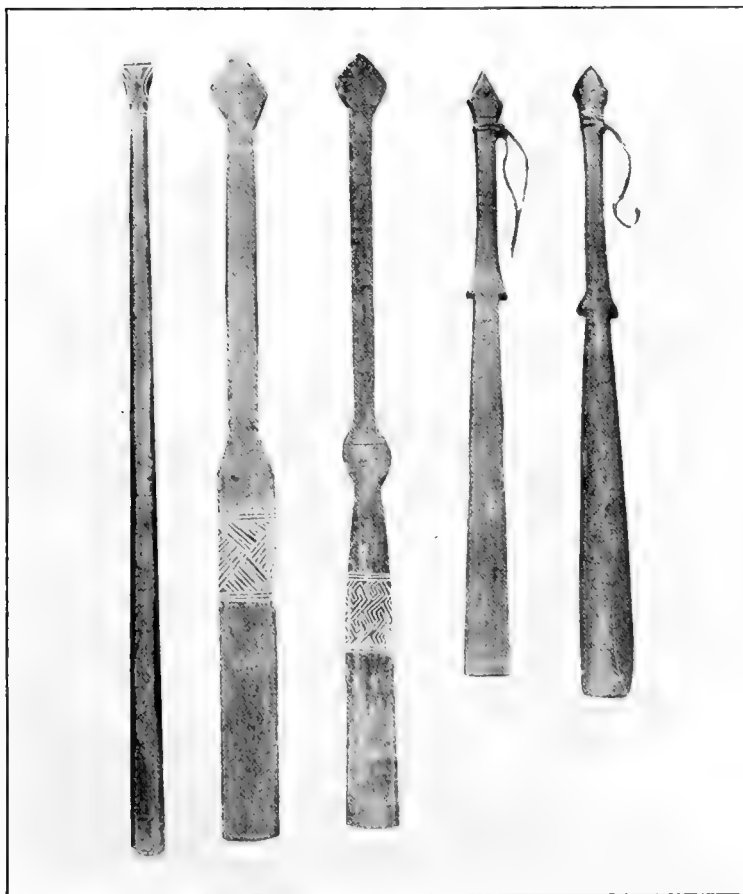
147. Gumilla many times mentions spears (*lanzas*) from the Orinoco, but unfortunately without detailed description; e. g., they trim and polish sticks as strong as steel in order to make spears of them (G, II, 89); wooden spears so hard that they can rival with the sharpest bayonet points (G, II, 98); young men armed with bow, arrow, and spear (G, I, 253). But more than a century previously Harcourt had recorded spears as "long staves sharpened at the point and with fire hardened" (HR, 373). The Carib Islanders had *azagayes* (*assegais*), a kind of small sharpened lance, made of the wood of the *latanier* palm, which they darted with the hand at their enemies (RO, 81).

C. D. Dance in his "Recollections of Four years in Venezuela" (London, 1876, p. 154) gives an interesting reference to this weapon at the time of the revolution, the heterogeneous cavalry with its

equipments being followed by a regiment of Caribbes infantry, "Sotillo's men," as they were proud to be called; "Sotillo's bloodhounds," as their enemies called them. Each was equipped with his bow and quiver of arrows suspended over his back, and shouldering a lance, his only clothing a narrow strip of girdle and the lap. At the present time on the upper Rio Negro the Indians will attack the larger wild animals, bush hog and jaguar, at close quarters with wooden spears (*stosslanzen*) as long as themselves, tipped with a broad lancet-shaped piece of iron of European manufacture (KG, I, 107). De Goeje records an iron-tipped spear from among the present-day Trio of Surinam (GOE, pl. v, fig. 14). What material immediately preceded the iron tip it is now difficult to say. The nearest geographical reference that I can call to mind is from the old Estado Coro, between Maracaibo and Caracas, occupied by the Indios Caiquetias, who had wooden spears tipped with bone points. Of prehistoric evidence, stone spearheads have occasionally been unearthed in the northwestern coastal area of our own colony. Two such specimens, of quartz and jasper, are to be seen in the Georgetown Museum (pl. 36 A). In Cayenne the only mention of a spear is that by Barrère of the old-time short pike (*demie pique*, or *spon-ton*) of the Palicour, who called it serpo. This was a weapon of distinction, and used only by the chiefs of the nation (PBA, 167). On the whole, spears would seem to have been more generally employed in the western than in the eastern Guianas. Certain very curious spears for fishing are noted from the Orinoco Indians by Gumilla (G, I, 281), while Schomburgk speaks of the Warrau using light spears for killing fish (SR, I, 163), but in both cases the statements are unaccompanied with descriptions. The latter author is probably referring to the harpoon spears (sec. 148). More recently there has been recorded a curious three-pronged fish spear, made of *iriartea* palm, used on certain branches of the upper Rio Negro (KG, II, 34). Mention also has been made and illustration given of a two-pronged spear from the Apaporis (KG, II, 30). Arawak speak of a spear as *shiparari*, though they do not nowadays employ one. It gives, however, a name to their lanceolate pointed arrow (sec. 137). Specially carved and decorated spears are used with the wicker dance-shields by the Desana when *kaapi* is being drunk, and upon such occasions only. The upper end of the weapon is forked and each fork tipped with a piece of wood, bone, or a rodent tooth fixed with *kuraua* twine. At its lower extremity is a spindle-shaped enlargement in which pebbles are inserted by means of two longitudinal slits to form a kind of rattle. This spear is not struck on the ground, but while held fore and aft horizontally is struck on the performer's shoulder (KG, I, 345). Reference must be made to the poison spears

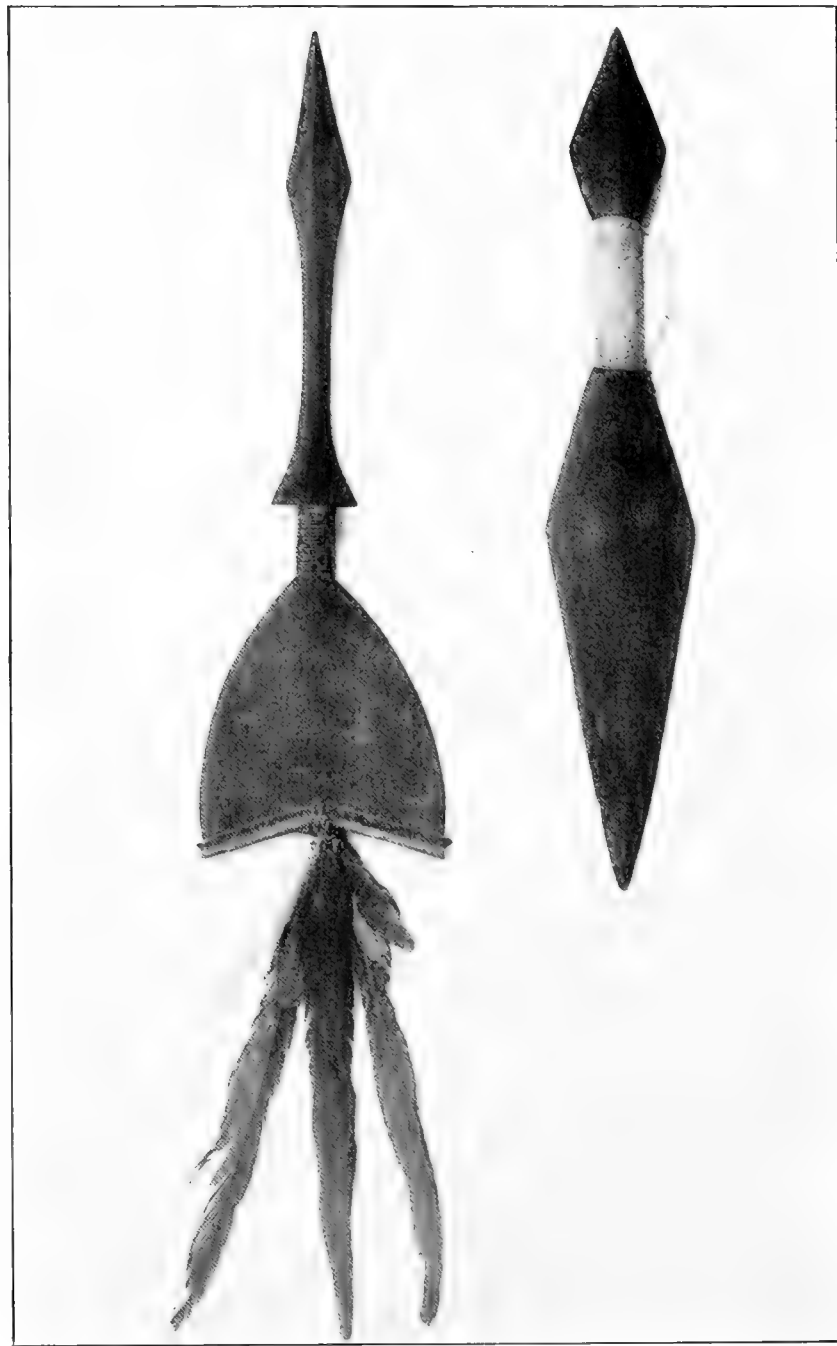


A, Old-time stone spearheads from British Guiana. (Georgetown Museum.)



B, Types of spatulate and paddle-shaped clubs from the Uaupes River. (After Koch-Grünberg.)

OLD-TIME STONE SPEARHEADS: SPATULATE AND PADDLE TYPE CLUBS



PADDLE AND DAGGER TYPE CLUBS

A, Paddle-shaped club of the Makusi, showing basketry covering, and feathered. *B*, Dagger type fighting club of the Akawai.

from the watershed of the Yapura, used both for hunting and fighting purposes. They possess a separate tip, though loosely affixed, and are made up into bundles of seven (sec. 762), their ends protected in a common casing, but with separate divisions, as were seen to be the case with the poison arrows of the Siusi, etc. (KG, II, 270).

148. Harpoon spears.—The Warrau on the Waini, etc., employ a harpoon spear for the capture of the larger kinds of fish. The earliest account I can find of such a weapon is the following: A fine young fellow (a Warrau on the Haimara-cabura, a branch of the Moruca River) had a kind of javelin, the shaft of which was made of a strong reed, in one end of which was inserted a piece of hardwood, forming the point. . . . He told me that it is used in striking the morocote and other large fish, fruit, or seeds, which they are fond of, being scattered on the still water while the Indian watches their rising, and kills them with an arrow or this kind of dart (FPJ, 43). The present-day article (fig. 57) is identical in construction with the *atómo* (sec. 142) save that the shaft of the latter is replaced by an 8-foot or so length of its leaf stalk, which is slit, contracted, and

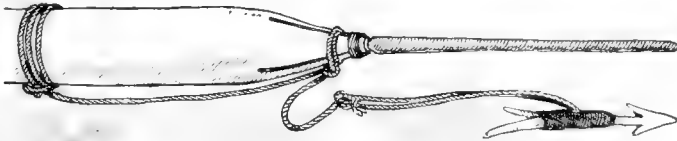


FIG. 57.—Harpoon spear of the Warrau.

tightly bound at either extremity. When iron is not available the barb is made of deer bone. [The *estolica*, a spear projected with a throwing stick or board, though met with in the Amazon district in close proximity (AC, 86-88; S-M, I, 1024, etc.), does not seem to have entered the Guianas.]

149. Among the Yahuna (Betoya stock) and other Indian tribes of the Apaporis certain primitive clubs are met with comparative frequency. They are heavy, knotty, natural wooden cudgels, about a meter long, to which a loop of palm thread or bark fiber is tied at the center. This loop is firmly attached to the right wrist, the weapon held with both hands, and the attacker, bending down, will, by thrusting the cudgel forward in a more or less horizontal position, repeatedly strike his opponent on the upper thigh or shin bone and so bring him to the ground, where he can be dispatched (KG, II, 287).

150. In the Guianas proper there would seem to have been at least four different types of war club scattered throughout the country, but they are apparently fast falling into disuse, if they have not already done so. It was Schomburgk who said that each tribe had its particular shape, although for some unknown reason the shapes

are interchangeable. Thus, among the Makusi, he says he found the form of war club which is peculiar to the Maionkong (SR, I, 425). Among the timbers employed for the manufacture of these weapons was the ironwood, purpleheart, snakewood, the amara, wamara or brown ebony, the washiba or bowwood (CC, 52-53), and black cinnamon (BE, 14). The clubs are frequently carved with fanciful figures (StC, I, 331), or, rather, they engrave on them various very peculiar designs, which they fill up with diverse colors (FE, 55), or they may be decorated with a very fine plaitwork. The handle is covered with cotton, wound tightly around it to prevent the hand from slipping, and it has also a stout loop of the same material, which is placed around the wrist for fear of dropping it when fighting. In battle, says Schomburgk, they (Makusi) take only seven poisoned

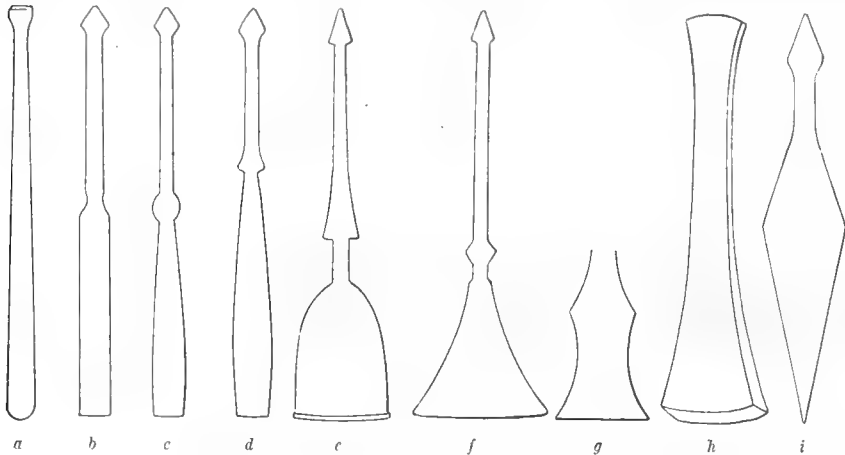
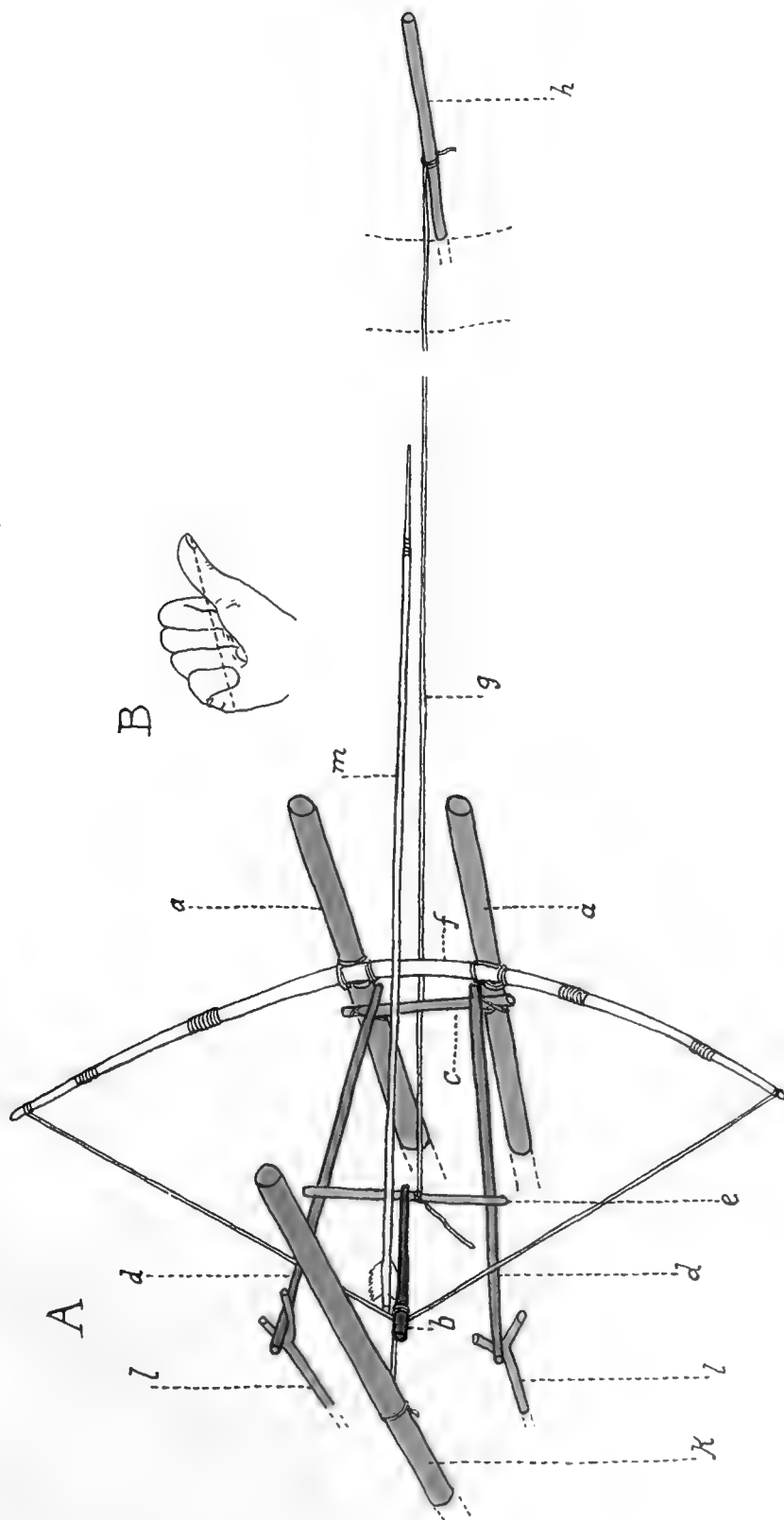


FIG. 58.—Diagram showing variations in shape of the Guiana club.

arrows with them. When these have been shot they come to hand-to-hand battle with the clubs (SR, I, 425).

151. An obsolete spatulate club of the Caiary and Içana Rivers (upper Rio Negro) was that made of a hard red wood, over a meter long, the handle decorated with an engraved pattern, and gradually passing with a flattened course (fig. 58 *a*) into the narrow blade with rounded edge (KG, II, 133). The wooden swords mentioned by Harcourt and Wilson (sec. 116) may have been war clubs of this spatulate type.

152. The paddle-shape club, with pointed proximal extremity and a flattened distal one, is of wide geographical distribution, having been met among the Arekuna, Wapishana, Makusi, Arawak, Warrau, Oyana, Koróa, Umáua, etc.; i. e., practically from Cayenne to the Orinoco (pl. 36 B). Some of these weapons were of large size and required both hands to wield them (Br, 97). Occasionally (e. g., by the Umáua) they were used as canoe benches (KG, II, 132). These



A BOW-AND-ARROW TRAP, AS SET BY THE ARAWAK

paddlelike weapons are seen to vary from almost straight sides (fig. 58 *b*) to highly convex (*c, d, e*) and concave (*f*), even double concave (*g*) edges. The last mentioned may be highly ornamented with incised designs (GOE, pl. vi). Modifications of this paddle club can be employed for dance purposes by Ojana (GOE, pl. v, fig. 1), Koróa (KG, 11, 133), Makusi (pl. 37 A), Wapishana, and others.

153. Another form of club (pl. 39), the block or cubical type, of similar or perhaps even wider distribution than the former, is the *mossi*, or *mushi*, of the Arawak, the *potu*, *butu*, or *aputu* of the Carib (fig. 58 *h*). Manufactured from the hardest and heaviest woods procurable, it had square ends with sharp corners, thinned in the middle where it was wound round with strong cotton thread, to which a strong loop of the same material (woven into a band—sec. 53) was affixed. In the old days it would seem to have been occasionally provided with a sharpened celt inserted into a carefully cut pit, hollowed out on one of its sides, wherein it was fixed with karaman cement. The extraordinary statement of Stedman that the Indians used to fix the stone in the future club by sticking it in the tree while growing, where it soon became imbedded, when in due course the tree was cut, etc. (St, 1, 397), has been repeated by Brett (Br, 134), Crévaux (Cr, 16), and others. Modifications of this block form of club, but on a much smaller scale, and often with an incised decoration, are requisitioned on occasions of dance and festivity, perhaps also of ceremonial. Certain of the stone hatchets have been mentioned as fighting implements (PBA, 168, 174).

154. The remaining type of Guiana war club (pl. 37 B) approximates that of a dagger (fig. 58 *i*), and though met with by Schomburgk among the Makusi, is said by him to have been peculiar to the Maionkong. Both Akawai and Carib have told me that their forefathers were wont to use this weapon. It runs at one extremity to a sharp point, above which the club broadens more and more until it becomes again bluntly pointed above. The handle is toward the middle of the weapon. The object of the sharp point is to insert it in the ear and then drive it into the brain of the fallen foe (SR, 1, 425). It was thus used as a club, a cutting weapon, and a bayonet. The constant companion of the Maionkong, when he sits down or squats, he sticks it into the ground in front of him (ScF, 238). The handle was overcast with cotton thread (sec. 43).

CHAPTER XI

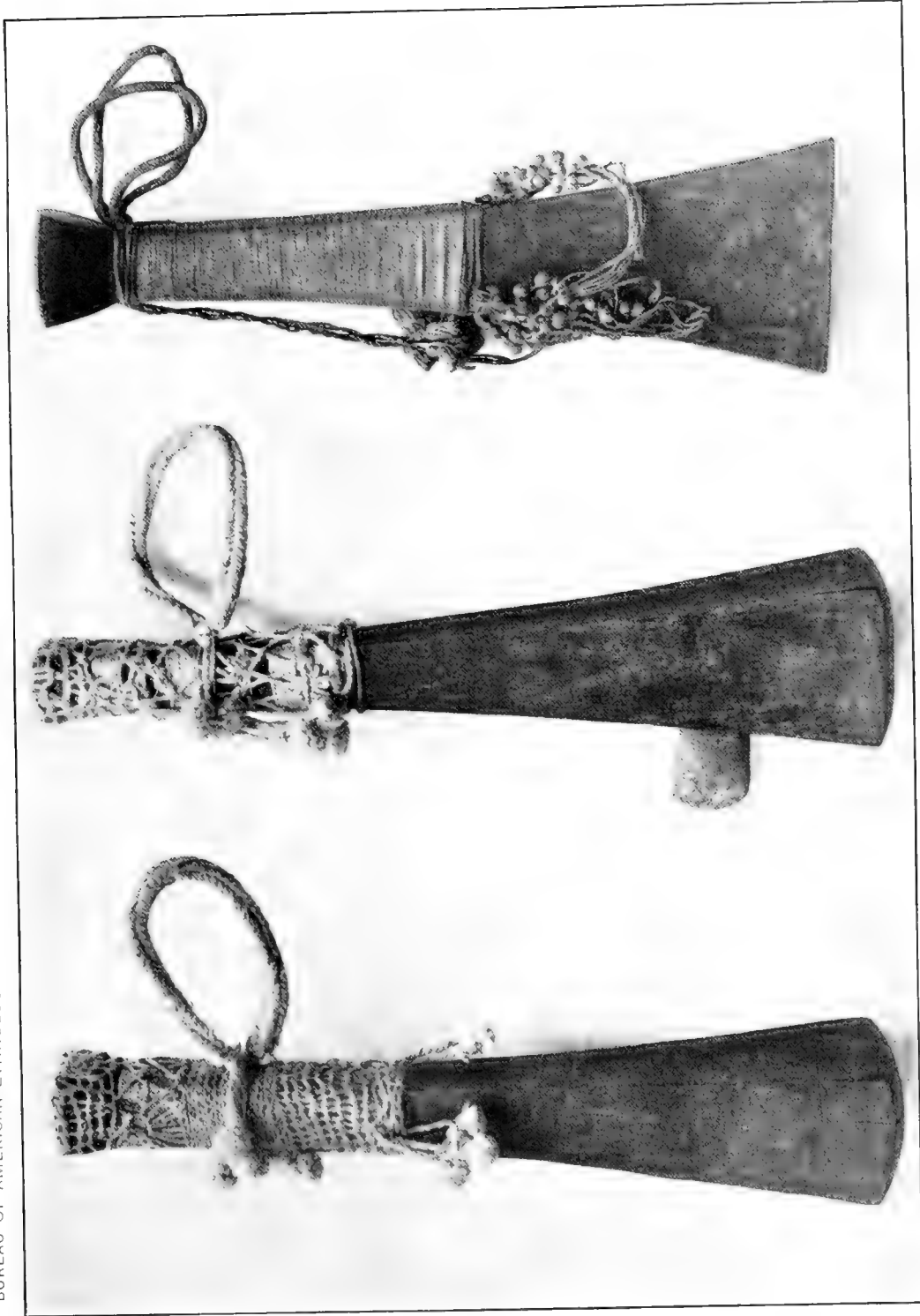
ANIMAL FOOD: SEARCH, CAPTURE, AND PREPARATION

General methods and means of capture (155-161); preparatory ordeals, etc., for the hunter, etc. (162); cooking and preservation of food (163).
Capture of animals: acouri, adouri, agouti, labba (164); armadillo (165); ant bear (166); bush hog (167); deer (168); manati (169); monkey (170); otter (171); rat (172); sloth (173); tapir (174); water-haas (175).
Capture of birds in general (176-180); quail (181); duck (182); cock of the rock, toucan, etc. (183); quacharo (184).
Capture of fish by diving, feeling, stealing (185); enticed by sound, scent, or sight (186-189); caught by bow and arrow, harpoon, cudgel, cutlass (190); hook and line, with bait (191, 192), and without bait (193); cylinder fall trap (194); spring hooks (195-200); fishing nets (201); dams (202); weirs and fences (203); creels, cages, etc. (204-206); puddling (207); poison (208-214).
Of remaining animals: turtle, tortoise (215); iguana, lizard (216); alligator (217); frog, toad (218); snake (219); crab (220); molluscs (221); earth worms, etc. (222); insects: caterpillars and grasshoppers (223); beetles (224); ants (225); wasps and bees (226).
Honey (227).

155. The employment of dogs in the capture of game is of common application. It is usual for Indians to go in canoes along the banks of rivers or creeks while their dogs range the woods; and when they light on game they immediately give tongue and endeavor to drive the terrified animal to water; here, the Indian on the watch . . . prepares his bow and arrow, and paddles his canoe without the smallest noise in the direction of the sound, and transfixes the animal as he plunges in the water (Arawak on Corentyn, StC, I, 317). Again, dogs may be trained to hunt particular animals only, as deer, acouri, quail, tortoise (sec. 162).

156. The hunting instinct of otters and jaguars for fish and tortoise, respectively, may be utilized by Indians in stealing from them their quarry (secs. 185, 215).

157. With nocturnal animals the sudden and unexpected appearance of daylight as mimicked by a flash-light, torch, or lamp may prove the creature's undoing. At any rate this is the explanation given by the Indians to account for the success met with by the exercise of such methods. A torch at night, as is well known, will bring certain fish within reach of club or cutlass. The popular belief is that they are attracted out of curiosity, the Indian view being



B
BLOCK TYPE CLUBS

A, Carib, Waimi River; B, with stone celt attached, Arawak, Morica River; C, Akawai, Guyana River.



WATCH POST IN TREE. (After Crévaux.)

that they are fooled into believing that the day has dawned. So with the labba, both opinions are current. On the upper Demerara at every little timber grant or Indian camp is to be seen the regular bull's-eye lantern of the London "bobby." These lanterns or "shoolers" are imported and sold expressly for labba hunting. Drifting noiselessly at night down the stream in a corial, with a friend guiding the paddle, the huntsman, with gun in one hand, flashes the lantern in the other along the banks. When about to shoot he raises his gun to his shoulder, steadies it with his left hand that still holds the lantern, and by the help of the light shining along the barrel, takes aim and fires.

Among other methods commonly practiced is that of holding a big drive and, circling around, shooting at close quarters. In the Waiwai country the Indians will thus drive the big black spider monkey (the couata), and on the Takutu the Wapishana will do the same thing with the deer (JO). So, also, on the Orinoco, when the Guajiva and Chiricoa reached the banks of a stream they would sweep the area in a semilunar evolution, and might extend it so as to complete a circle. In this manner they would all advance together toward the center, so that nothing—jaguar, deer, etc.—could escape when they discharged their arrows at close quarters. In order to facilitate the hunting, and so that the long grass should prove no obstacle, they took care to fire the ground, full of brambles, in close proximity to the stream where they proposed halting, and where the animals came to drink (G, I, 255). The burning of savanna grass for driving deer was also practiced on the Rupununi by the Makusi (SR, I, 363).

158. Snares and traps of various descriptions are also employed to catch game, birds, and fish, while to bring an animal within arrow-shot the most common method is to imitate its call. The latter may be effected with the mouth alone or by blowing into a folded leaf. In the pairing season it is a common trick on the Barima and Kaituma Rivers to imitate the call of the tapir and so bring it within range of bow and arrow. The same is done with deer (sec. 168).

159. Hiding shelters, watch posts, etc., in the form of more or less permanent inclosures fixed in the ground or upon the trees are employed by the Taruma, Waiwai, and Parikuta. Before the advent of guns they were used by the Wapishana. Those built on the ground, usually in the neighborhood of their cassava fields, are made of four uprights joined by crosspieces at a height convenient for the hunter to shoot his arrows. Kokerit leaves, with their stalks down, are arched over these crosspieces toward the inside and in sufficient quantity to prevent anything within from being seen. Here the Indian will take up his place and watch for acouri and other small

game. Again, in calling the *powis* the Taruma, Parikuta, etc., will in a few minutes with twigs, leaves, and branches rig up a temporary fence and from behind its shelter bring down the bird as soon as it has been called within arrow shot (JO). At Mapeime village, in the Canuku Ranges, on the recently formed small lakes, the Makusi were busied in making oval-shaped leaf-thatched shelters that rose 4 to 5 feet above the surface, in which they hid themselves. From inside these they shot with blowtube or gun the birds that were strutting along the shore or wading around in the water (App, II, 446). Similarly, watch posts are constructed high up in those particular fruit-bearing trees visited by certain birds, as toucans, and here they are watched for and shot (pl. 40). In the neighborhood of the Cuya River, on some of the higher trees rising in the savanna, Appun saw such exceedingly large nests that he jokingly considered them suitable for holding a roc's egg. On closer view and inquiry he found them to be huge baskets plaited by the Indians, who lay in them at night waiting for the jaguars that prowled around (App, II, 181).

160. Hunting arrows may be poisoned or not. Particulars of their construction and uses will be found elsewhere (Ch. X). They may be used with traps.

By means of a comparatively simple apparatus (pl. 38, A) a bow and arrow may be set for striking tapir, deer, or labba, the arrangement as a whole being known to the Arawak as *shimara-abbadágotah* (arrow trap). Two strong uprights (*a, a*) are driven firmly into the ground and joined by a horizontal crossbar (*c*), the height at which this bar is fixed depending upon the particular animal to be shot, a height of one hand-width for labba, three for deer, and eight for tapir, a hand-width being reckoned as the distance between the tip of the extended thumb and the inner edge of the closed palm (B). A third strong upright (A, *k*) is driven into the ground between them right behind. Between the anterior pair and resting upon the crossbar are two smooth rods (*d, d*), each supported horizontally on a small forked stick (*l, l*). The central portion of the bow (*f*) is next strongly tied on to these two uprights immediately above the crossbar and the rod ends. The catch string (*g*), against which the animal strikes, is now attached at one extremity to a post, tree, etc. (*h*), on the immediately farther side of the track and, passing under the crossbar, is fixed at the other to a carefully trimmed key pin (*e*) lying across the rods. This pencil, after the catch string has been stretched sufficiently taut, is held in position by the pressure upon it of a trigger (*b*) tied on to the posterior upright and passed from below upward and over the drawn bowstring. The arrow (*m*) is finally adjusted in place, only to be freed on the disturbance of the catch string, whereby the key pin is tilted forward,

and with this the trigger and bowstring released (WER, iv). A gun fixed somewhat similarly is sometimes substituted for the bow. Dance speaks of a trap gun used for water haas on the Berbice River, with several long cords attached so as to strike the animal walking in the immediate vicinity, no matter the direction in which it may be moving (Da, 14). In this latter respect he is probably in error, as will be seen in the description given by G. E. Bodkin in his "Gun-Trap of the Guiana Indians" (Ti, Sept., 1919).

161. In the area along the upper Barima River, armadillos, labbas, and similar game are caught with a fall-trap. Along both sides of the track followed by the animal one builds a fence of vertical sticks, the tops of which are about 2 feet from the ground. In front and at either extremity of one side of this passageway is fixed a forked stave which supports a rod slanted off at its extremity, the slanted tip of one rod overlapping that of the other. A long lath placed at one end at a very acute angle on the ground rests at the other upon the base of each rod, the former being attached by bush rope, etc., to each extremity of a comparatively heavy log which projects beyond the ends of the alleyway and lies its full length along and above it. A string with a loop is looped over the two overlapping extremities of the rods, and passing downward behind a crossbar firmly fixed to two of the middle vertical sticks constituting the fence, is tied round the trigger below. This trigger is a more or less flattened piece of wood with an upper broad base and a lower comparatively tapered extremity. The former presses on the crossbar, the latter upon the end of a key pin measuring the width of the run, and maintains it by pressure in position up against a vertical stick on the opposite wall. On the animal passing through the trap it knocks against the pin and releases the trigger, with the result that the overlapping tips of the rods fly up and the log falls down and crushes it. Being built upon the particular track followed by the labba, armadillo, etc., the trap is never actually set until some time after construction, so that the quarry may become used to it. In the meantime the pin is removed and the point of the trigger held against a secondary temporary crossbar placed below the fixed one. The extremities of the laths only overlap for about half an inch or so, an arrangement upon which the whole delicacy of the trap depends.

Schomburgk mentions certain artificial hedges, 2 or 3 feet high, with openings 50 paces apart, in the neighboring forest at Golden Hill, Demerara River, for hunting the smaller mammals. At each opening is a trap which, when set loose, falls on the animal and kills it, but the idea has doubtless been borrowed (by the Arawak) from the negroes (SR, II, 499). Such fall-traps are still in use and can be met on the Demerara River up from Christianburg, which is

only 4 miles from Golden Hill. They are known as sappa, which is probably Creolese for trapper. They are used for catching bush rat, labba, and acouri. It is fixed either along the run or in the spaces purposely left open in the artificially made bush fences. It consists of a heavy plank weighted with a stone, etc., one extremity of which hangs in a loop hung up from one end of a catch-stick resting on the crossbar fixed on two vertical forks. The plank is cut out of the spur of some large tree, and may be replaced by a heavy log, but in this case its lower surface must be squared down so as to have a sharp edge where it rests on the bait stick. The farther end of the plank rests against a peg so as to prevent it from slipping. The other end of the catch-stick is held down by the bait-stick, upon which the sharp edge presses. As the animal nibbles the yam, potato, etc., attached to the bait-stick, this latter slips from off the catch, with the result that the plank being released falls and crushes the animal beneath.

162. With the object of winning success in the chase, the hunter will submit to various purposely inflicted inconveniences and suffering (i. e., he voluntarily undergoes certain ordeals). Some of these have been discussed elsewhere (WER, VI, secs. 227-231), while others, such as nose-stringing, are given with more detail in the present volume (sec. 63). I have still, however, to add a few notes concerning ant biting. For this purpose the insects are held in a convenient position by inserting them in the meshwork of at least two types of frame. At Wakrapo village, about two days' march behind Toka, on the Rupununi, Charlie, the house master, a Makusi, gave me a triangular itiriti frame (pl. 42 A) of a hexagonal pattern, which he told me he put to use on himself by fixing certain biting ants in the interstices, so that when pressed on his arm and breast they might bite him. The shape of the framework, he told me, represented the breastbone of a deer, the game which he especially sought to hunt. The commoner type of frame among the Makusi and other closely related tribes thus used to secure luck in hunting (WER, VI, sec. 230) is made of numerous itiriti strips tied together like a roll-up mat (pl. 42 B). Such ant frames must not be confused with those employed for purposes of chastisement (sec. 739), nor with the more complicated and more highly finished article used in the eastern Guianas at the puberty and marriage ceremonies (WER, VI, secs. 269, 276). But, besides the master, his hunting dog may be subjected to a form of purification by different ordeals, quite as painful as those undergone by himself (WER, VI, sec. 232). Caterpillars, such as the hairy *Gastropacha*, were roasted and then rubbed in the nose of the hunting dogs before proceeding on the chase, the Indians believing that by doing this they will possess a keener scent (App, II, 415). Even

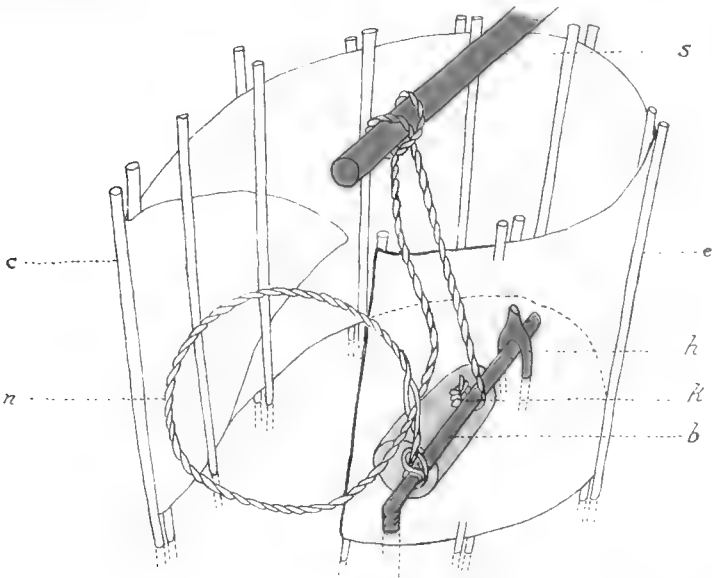


FIG. 1. Rat trap of the Arawak and Warrau.

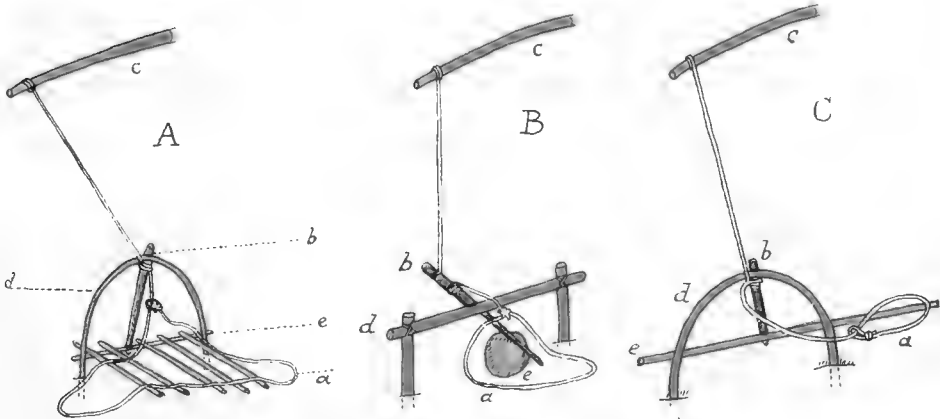


FIG. 2. Spring snares for birds. *A*, Arawak and many other tribes, *B*, Makusi, Patamona, *C*, Uaupes River District Indians. *a*, Running noose; *b*, trigger; *c*, spring; *d*, frame; *e*, key-pin.

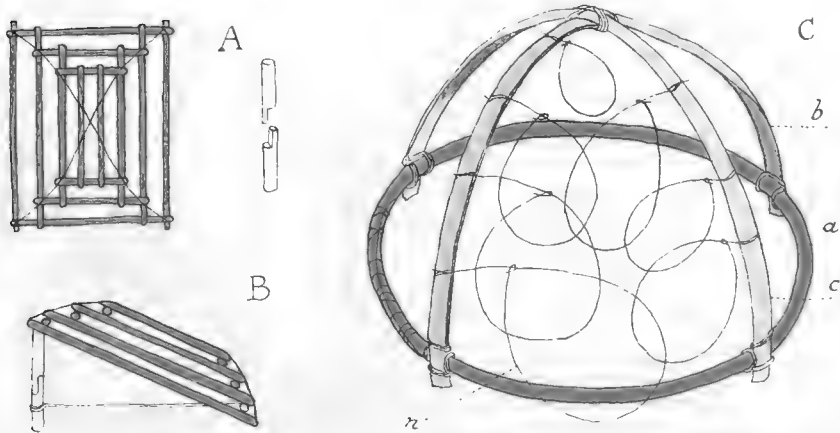
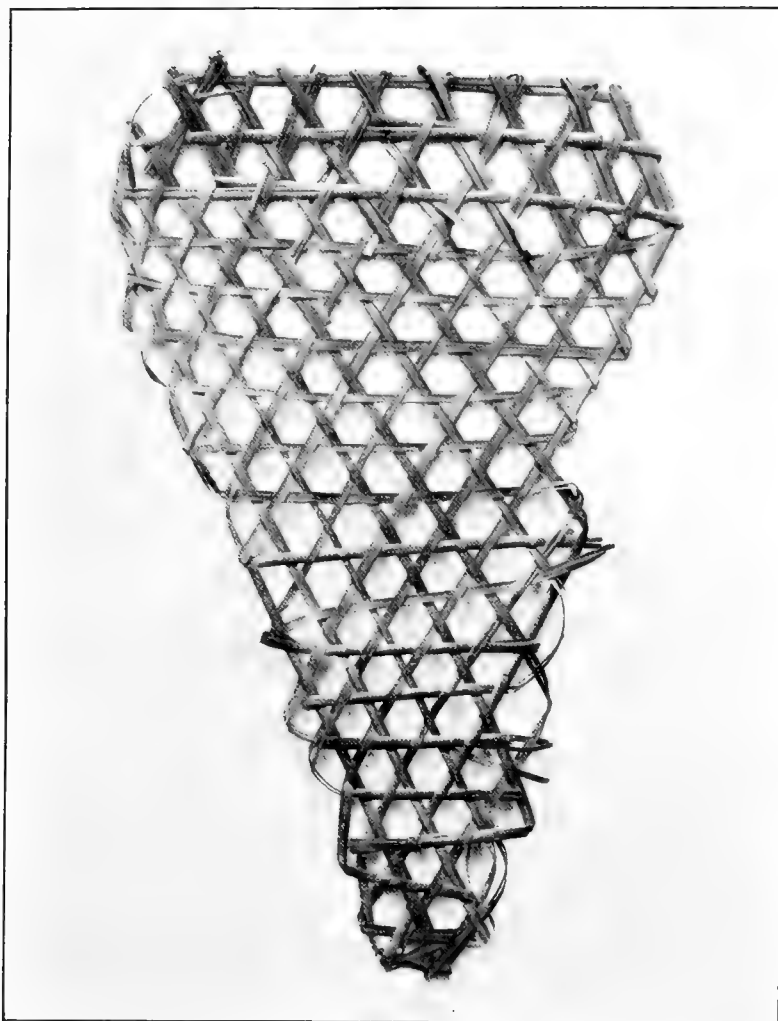
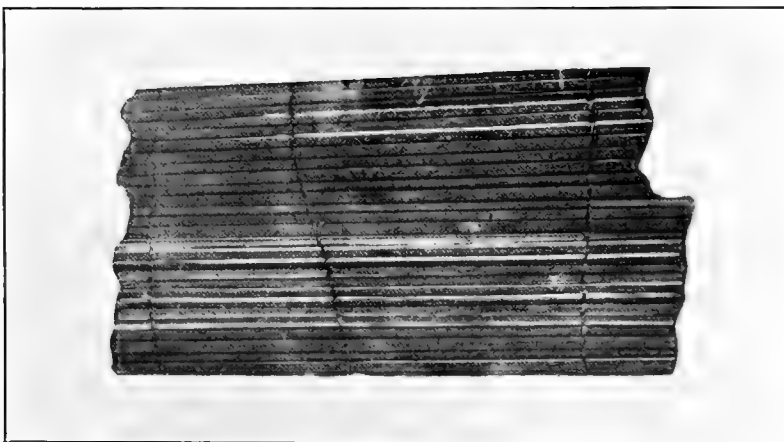


FIG. 3. Bird traps and snares. *A*, *B*, Fall trap. *C*, Snare trap.

RAT TRAP AND BIRD TRAPS AND SNARES



A, Purposely designed to represent the breast bone of a deer.



B, With the bodies of live ants in its interstices, as a preparatory ordeal for hunting.

ANT FRAMES

then the necessary chain of conditions to insure good luck is incomplete without the application of the many attraction charms, or binas (WER, vi, sec. 233. Consult PEN, i, ch. XVII).

163. The usual Indian method of cooking all animal food is by boiling it either with water or the juice of "poison" cassava, to which they add such a quantity of red pepper as would instantly excoriate the mouth of a person unaccustomed to its use (BA, 323). Meat can thus be preserved "moist" almost indefinitely by keeping it soaked with this boiled poison juice, or "cassarip," and peppers, and boiling it daily—the ordinary form of what is known as "pepper pot." Meat can be likewise preserved "dry" by smoking it from time to time on the so-called barbecue, boucan, babracote, etc. The Wapishana, Atorai, and Taruma boucan their deer and tapir meat, and after drying well and removing the bones they pound it up in a mortar and serve it dry. The ordinary corn mortar can be utilized for the purpose, but a special one is occasionally employed (JO). It is said that the better to preserve the flesh of birds these are sometimes boiled previous to barbecuing. To prepare any larger sized bird, as powis, for the table, it will be dressed by a woman as follows: The feathers are all plucked, except from the head, and the bird tied up by the neck at a height of about 3 feet to a strong staff stuck vertically into the ground. The cook (in this particular instance a Makusi) first of all cut off the toes, then the drumsticks, and next the thighs; the wings then followed suit. On sticking her knife into the bird's crop, and twisting it around once or twice, the various seeds, etc., that had been swallowed fell onto the ground. With a vertical cut down and along each shoulder and side the "breast" was removed in one piece. The whole of the entrails were now extracted in one mass by a careful manipulation with the hands, and the heart and liver thrown into the cooking pot. The back was next divided from the neck, and this finally divided from the head. On the Oyapock River the Oyambi Indians, after smoking the tapir meat on the boucan, bury it in the ground with leafy branches beneath and many leaves above (Cr, 199). When salt is available, the fish, where the size warrants it, is cut open and cleaned, its sides slashed with vertical cuts, the salt well rubbed in, and then dried in the sun. Small fish are generally wrapped in banana, *Scitaminea*, etc., leaves, tied up, and roasted (App, II, 304, 537). The Indians throughout the upper Orinoco fry their fish, dry them in the sun, and reduce them to powder without separating the bones. Von Humboldt describes having seen masses of 50 or 60 pounds of this fish flour (*manioc de pesculo*) which resembles that of cassava. When it is wanted for eating, it is mixed with water and reduced to a paste (AVII, II, 454). Wapishana pound the fish, mix it with salt, and

jam it into an earthen pot which is kept well covered. It is said that it can be preserved a long time in this manner (JO).

Fish roes are a great delicacy to the Indians, who, in the spawning season, shoot an immense number of heavy fish, the bodies of which are of little account when the roes have been extracted. The roes are then smoked, and in this state large baskets of them may often be seen in their houses (IT, 237-238). On the Rupununi I have watched the Makusi eating arowanna (*Osteoglossum* sp.) eggs, after folding them up in a kokerit leaf and roasting.

The Orinoco Indian fashion of cooking a turtle is to place the dead animal in a hole in the sand, just as it is, without any cleaning and without removing the shell. It is then covered with sand and a big fire lighted on top (Cr, 576). So far as the eating is concerned, the husband takes the upper shell and attached meat, fat, etc., and the wife the lower shell (G, I, 292-298). To preserve turtle for future requirements, the practice of penning them up in pools or stockades was, and is, in vogue throughout the Guianas. On the Orinoco they kept large quantities of the very little ones in artificial pools dug out of the sand (G, I, 292-293). On the Amazon they dug a pond of a moderate depth to hold a good quantity of water, which they inclosed with a palisade of stakes, etc. (AC, 63). In Cayenne they kept the turtles in stockades (PBA, 156). Turtle eggs are considered a delicacy and are eaten fresh or smoked. Immense quantities of the eggs are placed on frames and dried over a slow fire and in the sun's heat. They kept lots of such dried eggs in baskets at their houses (G, I, 180, 292-293). An extremely important product of the turtle egg is the oil (sec. 26). With regard to bird's eggs, all kinds, even when stinking, are eaten by the Surinam Carib with great relish (AK, 188, 191-192). The eggs of the *Crotophaga major*, or "Old Witch" bird, are sought by the Makusi on the Zuruma or Cotinga (SR, II, 159). As to the eating of the ordinary domestic fowl egg, see section 724.

164. Acouri, agouti (*Dasyprocta aguti*), adouri (*D. acuchy*), and labba (*Coelogenys*) are hunted with dogs, or shot either when coming to feed or when "called" within range. The labba . . . always keeps near the water and plunges in when pursued. The Indians hunt it in two parties, one chasing it with dogs to the stream, while the other, in a small canoe, follows the sound of the chase (Br, 20). Favorite foods of the acouri are the fruits of the mora and awarra (*Astrocaryum*), and hence the hunter will build a staging up in a tree near one of these, and there keep watch on a moonlight night for the quarry to come and feed on the fallen fruit. In the Patamona country I saw a "bench" fixed to a tree at such a height as to require a special apparatus (fig. 59) to reach it—a sapling, bent to one side and tied to the trunk, and a vine hoop hung on the bench itself, each

taking the place of the rung of a ladder. The call of the agouti can be imitated by whistling through a leaf rolled up like a horn (Cr, 205). On the way back from making an ascent of Mount Roraima my Patamona guides ran down an acouri in the open savanna. Each time the creature tried to turn into the bush one of the boys intercepted it, and thus forcing it out into the open, they kept on chasing it until they succeeded in getting near enough to kill it with a stick. Within recent times, on the Demerara River at least, the acouri, etc., is hunted by lamplight (sec. 158). Acouri and labba are also trapped (sec. 161).

165. The armadillo is usually dug out of its underground burrow. To prevent disappointment the Indians carefully examine the mouth of the hole and put a short stick down it. Now, if on introducing the stick, a number of mosquitoes come out, the Indians know to a certainty that the armadillo is in it; wherever there are no mosquitoes in the hole, there is no armadillo. [Strange to say, as I have already recorded, the North Queensland aborigines practice a similar method of determining the presence of an opossum in a hollow tree.] The Indian, having thus satisfied himself that the armadillo is there, will cut a long and slender withe and introduce it into the hole. He carefully observes the line the stick takes, and then sinks a pit in the sand to catch the end of it. This done, he puts it farther into the hole and digs another pit, and so on, until at last

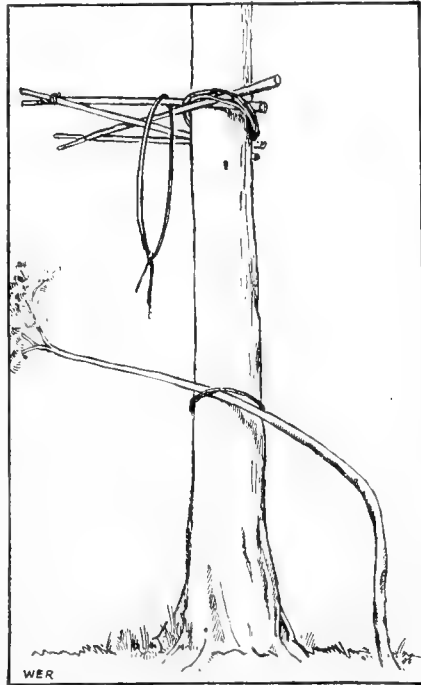


FIG. 59.—An acouri bench in the Patamona forest.

he comes up with the armadillo which has been making itself a passage in the sand till it has exhausted all its strength through pure exertion (W, 212; StC, II, 45-46). It is said that a labaria snake is commonly met in the armadillo burrow. Gumilla also refers to this association of the two animals from which many misfortunes arise. For instance, among the Guajiva and Chiricoa, who live principally on them, there is not a tribe (capitania) but has 40 or 50 of its members mutilated or lamed. These people are so savage that if, in pulling an armadillo out of its hole, one gets his hand bitten by the snake, the others im-

mediately cut it off. If the individual happens to be alone he does this for himself (G, II, 262-263). The association of armadillo and snake is also drawn attention to in one of the legends (WER, VI, sec. 7).

166. Many of the Indians appear to have a great dread of coming into direct contact with the ant bear or giant anteater (*Myrmecophaga*); and after disabling him in the chase never think of approaching him until he is quite dead (W, 206). There is a reference to this practice in the story of "How the anteater fooled the man" (WER, VI, sec. 153). He is said to be able to crush to death with his claws not only a jaguar or tapir, but even a man. I only know of the flesh being eaten by Carib.

167. Of the bush hogs, better known perhaps as the peccary or kairuni (*Dicotyles labiatus*) and the abuya (*D. torquatus*), the more formidable is the former. The characteristic dorsal scent gland of these animals, which for well over a century was regarded as the navel, has to be cut out immediately after death, as otherwise the flesh can hardly be eaten. As a matter of fact the term applied to the creature, kairuni, is derived from the Makusi word kair, signifying "stinking" (SR, II, 95). Like those of the deer, etc., the entrails are eaten and relished. It runs in herds, sometimes comprising between 200 and 300, and woe betide the Indian if he comes upon them unprepared, in which case his only chance of escape lies in climbing a tree. Fermin, it is true, would have us believe that the surer way is to wait for them without stirring, and to void one's urine, because they dread the smell very much (FE, II, 92-93). Brown describes the method adopted by Parmu, his Carib companion, as follows: His plan of shooting hogs was to get in their front, and when they charged or ran he stepped behind a large tree, around which the drove passed on either hand. As they held on their way he discharged his arrows into the mass with good effect. Although it seemed to be a dangerous proceeding, hemmed in for a few moments on both sides by hogs with a tree at his back, it was not so, for they never attempt to turn when rushing forward in this way (BB, 252).

On the Cotinga . . . dogs are trained to force away a straggler from the pack and endeavor to surround it until the hunter gets up and can shoot it. When this is killed the dogs hasten to secure a second and a third, etc., out of the pack. Should the hunter meet a drove and not have his dogs with him, he tries his best to sneak onto the quarry, and then climbs a tree, whence he imitates the barking of a dog. The animals hardly hear the sound before they rush in the direction where their arch enemy is supposed to be, and surround the tree, whence the Indian, with his bow and arrow, can now slay several (SR, II, 164). Gumilla talks of the Orinoco Indians as

hunting bush hog with a harpoon made of bone or iron, with two barbs on either side, and attached by a strong cord to the shaft. When the beast is struck the harpoon is freed from the shaft, which, dragged along, gets caught in the undergrowth (G, 1, 258-260). The present-day Waiwai use a detachable bamboo-headed arrow for the same purpose with similar results (JO). When hunted with dogs and a bush hog is driven, say, into a hollow fallen log, no little ingenuity has to be exercised in getting him out and preventing his escape. By the old Warrau and a few Carib of the Pomeroon district, a creel-like cage is made to fit the open end of the timber, where it is firmly fixed with stakes, etc., wedged into the ground, and a hole cut (if not already there) in the narrower extremity, through which the creature is driven out from behind by fire or by prodding with long sticks. Once in the cage he can be easily secured. An identical arrangement is apparently employed by the Waiwai, judging from the accompanying illustration (pl. 44).

168. In the savannas, where there is little or no bush, as soon as the creature (deer) is sighted and is observed to bend down and graze, the Indian creeps forward like a cat, keeping the animal always in view, but remains as still as a statue directly the animal raises its head again. He may take two or three hours to get within range. When within 100 paces he mimics the call of the buck. The deer is all attention, pricks up its ears, stamps its forefeet, and gradually circles closer and closer until, when within 20 paces, the hunter lets his arrow fly (SR, 11, 57). But all this would appear to be unnecessary trouble, because the deer can be walked up to within arrow or gunshot, provided that each time the creature looks up from grazing the hunter remains absolutely still in the particular position he may have assumed at that moment (JO). Instead of being attracted by the call, deer may be attracted by scent. The Guaybas, Tunebos, and Chiricoas of the Orinoco, when deer are to be seen, will anoint their breasts and portions of the arm with mara resin (probably derived from the *Protium carana*), and, taking up a position with bow and arrow in the direction whence the wind blows, will cover themselves with leafy branches. As soon as the deer scent the mara they go in search for it, with head raised and distracted, and thus the Indians shoot them at their pleasure (G, 1, 272). Other methods commonly adopted for their capture consist in driving the deer with dogs down to the river, where the hunter will be lying in wait, or in watching for them at night in the clearings, or in setting arrow traps along the paths they are wont to travel. On the savannas the deer may be surrounded with a ring of fire and thus shot by the Wapishana (JO). The same people on the Takutu would seem to regard deer entrails, etc., as titbits (SR, 11, 57).

169. The manati, lamentin, sea cow, river cow, or pege buey (fish cow), etc., can be caught either with harpoon, fish arrow, or net. The Amazon harpoon thus employed was made of shell (AC, 61). Gumilla gives the following very graphic account of a manati hunt on the Orinoco. The wife paddles, while her husband stands at the bow watching for the animal to come to the surface to breathe. Paddling quietly along, directly the creature appears, the man will strike it with a double-barbed harpoon held by a rope (made of manati leather), the distal end of which is tied to the front of the craft. As the manati feels himself wounded, he darts off like lightning, for a league or more, dragging behind him the canoe wherein the man and woman are supporting themselves at considerable risk. Directly the manati stops, the Indian pulls on the rope little by little, until the victim, recognizing the canoe, starts away a second time. The rope is again pulled at, and so for a third time, when the animal invariably rises to the surface exhausted. They then haul him close to the canoe, open his belly, and so he dies. Now, although the river may be a league wide, and with nothing to afford them foothold, these two people, by themselves alone, will succeed in getting the creature, weighing between 600 and 700 pounds, into their boat as follows: They both jump into the water, and holding onto the sides of the canoe, tilt it over so as to get it almost full of water. They then easily push the vessel under the creature, and by means of a bailer (*vasija*) called *tutúma* (a calabash) which, for the occasion, is carried on the head like a cap, they start bailing out the water. As the water empties, so the canoe gradually rises with its load, which leaves just enough room to navigate it with. The Indian now climbs in and sits on the creature's head, while his wife takes up her position on the tail, and thus they steer the vessel to port, where their relatives and others are waiting for them, and among whom it is shared with great liberality (G, I, 285-287). The means adopted for getting the huge creature into the corial, by sinking the vessel beneath it and then bailing it out, is also recorded by Wallace on the Rio Negro (ARW, 319-320). The Corentyn Arawak used the sarapa or three-prong fish arrow to shoot the manati. . . . They generally go by moonlight, or very early in the morning, when the animal comes to graze on the foliage of the riverside, paddling their canoes quietly until they get within reach, and then letting fly their arrows. The animal immediately dives beneath the water, but soon appears again on the surface. . . . The hunter then discharges another arrow, and blows upon a shell having a small hole cut in it. The sound is reechoed by the woods, and alarms the animal so much that it again dashes off, followed by the canoe. The Indian can see the direction which it takes by

the (arrow) reed rippling the surface of the water. In this manner he pursues his game, blowing the shell whenever it appears, until the beast, quite exhausted with loss of blood, floats on the surface and becomes an easy prey (StC, 1, 333). It is also said that the manati can be occasionally caught in the river by taking a portion of the flower of the moku-moku and hanging this (taking care not to handle it except through the medium of a leaf) over, and almost touching the water near where the creature is supposed to be. As the manati approaches the bait, it is shot with arrows (Ti, June '83, p. 110). Wallace, on the Amazons, speaks of the manati being caught in a strong net at the narrow entrance of a lake or stream and killed by driving a wooden plug up its nostrils with a mallet (ARW, 128, 319-320). The Wapishana similarly plug the two nostrils with a forked stick (JO).

170. Monkeys may be "called" within arrow shot, either of the bow or blowpipe. J. G. Quelch, when on a journey up the Essequibo and Potaro, speaks of a Makusi huntsman imitating the cry of a couata monkey so exactly that when the man had disappeared some little time in the bush, so that the loudness of his voice was deadened, it was perfectly impossible for him to distinguish which was the imitation and which the real cry of the brute (Ti, June '89, p. 159). To secure the half-grown young *Cebus apella*, the Makusi will shoot them with stumped, instead of pointed, arrows, and thus stun them (App, 11, 442). It would seem that on the Orinoco monkeys were shot with the harpoon arrow (G, 1, 260).

171. In recording his experiences among otters or "water dogs" on the Berbice, Dance says that when the boys see them they emit a wide open-mouth sound, while tapping the larynx with their fingers. The gurgling sound, which somewhat resembles the tone of the otter's voice, often brings these animals around a corial, apparently infuriated (Da, 119). I have met with similar experiences on the Moruca River, but do not know of its flesh being eaten by any of the tribes, except perhaps the Carib.

172. The rat trap (pl. 41, fig. 1) of the Arawak and of the Warrau, who use a species of this animal for food, consists of a noose (*n*), bent switch spring (*s*), bar (*b*), hook (*h*), and inclosure (*c*, *e*). The noose is made of an itiriti strip about 4 feet long, twisted upon itself, and then allowed to double over, so as to form a two-strand locked by its own torsion. Its free ends are knotted together (*k*). Twine, etc., can not be substituted for the itiriti, the latter being the only material to hand which will not "stick" should rain or moisture fall. The bar, from 12 to 16 inches long, is strong yet pliable, and after being stuck firmly into the ground has its exposed portion bent over at right angles, a position maintained by means of the forked stick or

hook (*h*) clamped over its extremity. It is thus made to lie horizontally with, and about one-half an inch from, the surface of the soil. Looped on to this bar is one end of the noose, which is successively looped through itself, fastened by a clove hitch on to the extremity of the spring, and passed back again from outside under the bar, where it is fixed in place by means of a cylindrically cut piece of cassava jammed tightly up against the knot into the interspace between the bar and the surface of the ground. Except immediately in front of the noose, the whole is surrounded with a miniature fence or inclosure (*e, e*), formed of a broad itiriti or other leaf, set up edgewise between a varying number of light wooden slips. [For diagrammatic purposes, a portion of this inclosure is represented as transparent in the illustration.] As a result of this arrangement to get at the cassava the rat has to pass through the noose, in which, as soon as he starts digging up and removing the bait, and so frees the knot, he gets hoisted and caught (WER, iv).

173. The Waccawai (Akawai) and Carib eat the flesh of the three-toed sloth, which they describe as fat and well flavored (ScE, 168). The Waiwai and Parikuta also eat it (JO).

174. As to the tapir or bush cow, the Achagua watch for these animals at the river banks and imitate their call. As they approach they shoot them with poisoned arrows (G, I, 264). On the Rupununi Schomburgk also speaks of shooting tapir with the poisoned arrow (ScO, 110). Elsewhere they may be snared or shot with the arrow trap. Schomburgk also describes how, on the Cotinga, when they were cleaning one of these beasts, the [Makusi] Indians carefully collected the blood, mixed with it small pieces of finely cut meat, and stuffed it into the intestine, which they did not cook, but only smoked (SR, II, 169).

175. The water haas (*Hydrochærus capybara*) is apparently the creature mentioned by Depons in the following terms: Another animal which abounds in the Oroonoko (Orinoco) and the neighboring rivers is termed by the Carib capigua, by the Indians chiquire, and by the Spaniards guardatinajas. Its muzzle resembles that of a sheep, its skin is red, and its tail so short as scarcely to be perceptible. These animals are eaten by the inhabitants on fast days from the idea that they partake more of the nature of fish than of land animals. They always swim in shoals, and occasionally raise their heads above water to respire. They feed upon the herbs which grow on the banks of the lakes and rivers, and are regarded by the Indians as a delicious morsel. They consequently kill them in considerable numbers by means of their arrows (FD, 151). An interesting note on the preparation of the flesh of this creature for food comes from the Upper Rupununi. . . . The men took it to the beach, and, re-

moving its entrails, filled the cavity with water. They then peeled short pieces of mokumoku stems, and with them beat up the water until it became frothy, continuing the process, which they called frothing, for a quarter of an hour. This was done to remove the rank flavor of the flesh, which it did most effectually (BB, 145).

176. Birds may be snared, "called" within arrow or gun shot, hunted with dogs, or sneaked up on and picked off by hand, poisoned dart, etc. The use of hiding shelters has already been mentioned (sec. 159). The old Dutch residents used to call certain parrots noose-birds (*Stropvogels*) because they were caught with a noose (*strop*) which was effected thus (by the Arawak between the Demerara and Berbice Rivers): The Indian, knowing the trees where the parrots mostly reside, covers his whole body, as well as the stick to which the noose is attached, with leaves. He knows how to let this drop dexterously over the bird's head, and, drawing the stick toward him, is always certain of its capture (BER, 85. See also sec. 181).

177. The spring snare (pl. 41, fig. 2 A) is made of a running noose (*a*) attached to a trigger (*b*), and thence onto the end of the spring (*c*). Having fixed a thin half-hoop with (*d*) firmly into the ground, the trigger is arranged in such a manner that so long as the connecting string remains taut it will support by pressure the key pin (*e*) placed across the legs of the hoop. Upon this key pin, and at a gentle slope, are made to rest some three or four perches, over which the noose is spread. The weight of the bird on any one of the perches is sufficient to press down the key pin, with the result that the trigger being freed, the noose is suddenly dragged upon and tightened, wherein either head, leg, or wing is caught (WER, iv). I have seen this trap used by the Pomeroon Arawak, but it is of a type similar to that met with on the Rio Negro (KG, 1, 228); indeed, on a larger scale, an identical spring snare is employed throughout the Guianas for such huge creatures as the tapir and the alligator. With the Makusi the staging is done away with altogether (B) and instead of a comparatively high hoop a square frame is fixed in the ground. The key pin is here kept in position by a potato, etc., which, on being shifted or removed by the animal, bird, rat, or whatever it may be, sets the spring and with it the noose in motion. The Patamona are said to substitute a smooth round pebble for the potato. In the Uaupes River district area (C) the half hoop is retained, and the staging dispensed with, the key pin itself constituting the perch. Once the bird alights on this the trigger is released.

178. The fall trap (pl. 41, fig. 3 A, B), perhaps of foreign introduction, is made of a centrally raised cover, the constituents of which, made of thin sticks, are jammed together in pairs, placed one above the other, in opposite directions, after the two diagonal strings have

been firmly tied to the four corners of the original lowest and largest frame. The cover is raised on one side (B), the center of which rests upon a vertical pencil, formed of an upper and lower mortise delicately balanced. From the latter to the opposite side of the cover is stretched a string, the slightest disturbance of which will break the balance of the pencil, and so cause the trap to fall; a very common method of catching pigeons (WER, iv).

179. The Moruca River Warrau youngsters will use the following snare trap for catching small birds during the nesting season (pl. 41, fig. 3 C): It consists of a light cane ring (*a*), about 6 or 7 inches in diameter, to which are attached two arched pieces (*b*, *c*), crossed at right angles. A large number of slip nooses (*n*), all formed of kuraua twine, are next tied around the limbs of the arches, so as to control the entire intermediate areas. [For clearness sake only one space is shown covered with nooses in the diagram.] The ends of the nooses are attached by clove hitch. The frame is tied to a branch over the nest with but little chance of escape for the bird when flying home (WER, iv).

180. Bird calls are imitated to perfection by Indians. Not infrequently, writes Bodham-Whetham, we obtained a powis or dorakuara by such means. At night the Indians would note the position of the roosting bird by its notes, and then in the early morn proceed in its direction, attract it by their imitative cries, and shoot it (BW, 257). In some of those cases where the bird call does not lend itself to imitation the bird itself may be caught and assist the Indian in securing others. The captive creature mimics a free one. Decoys are thus made use of, as in the case of grass birds, etc. Among the Arekuna Indians in the far hinterland, certain small parrots (*Pionus pileatus* Gm.) used to be easily caught by specimens of the same bird confined in a basket (App, II, 181).

181. It would seem that quail on the Orinoco were hunted with dogs, almost "pointers," as judged from the following description: With his little mongrel ahead of him the Indian, shouldering his basket, carries a rod with a noose at its extremity. The dog pursues his course and the birds take to flight, which is slow and short. The little cur, barking away, follows them, and they in their turn getting afraid don't remain on the ground but make for the first little tree or bush that happens to be near. Still barking away, the dog pursues them with greater eagerness, while the quail, with their attention so keenly fixed on him, do not appear to realize the presence of the huntsman, but allow themselves to be snared with the slip knot. Nor does the dog become silent until the last bird is caught (G, II, 260). Wapishana of the present day similarly employ the slip knot and rod (JO).

182. Dance mentions how, on the Curiebrong River, he saw two boys quietly swim out and dive. While the "wicissi" ducks were luxuriating in the river, they were each seized from under the water by the lads (Da, 233). [This method of capturing ducks was paralleled westward of the Guianas, on Lake Maracaybo, where the Indians purposely allowed empty calabashes to be continually floating on the water around their habitations in order that these birds, by being habituated to their presence, might not be intimidated. When an Indian wished to procure any of these fowl he put on his head a calabash, perforated so as to permit him to see without being seen. In this manner he went into the lake, keeping his head above the surface of the water, but taking care that no part of his body should be visible. He proceeded thus, swimming to the spot where the wild ducks were collected in the greatest number, then seizing them by the feet he immediately dragged them below the water, so that they had neither time to cry out nor to make any motion which could warn the others of the impending danger. As fast as they were taken he fastened them to his girdle, and never thought of retiring until his wants were fully satisfied (FD, 15).]

183. To obtain the beautiful skins of the "cock of the rock," or "rock manikin" (*Rupicola elegans*), the Indians will look out for their "playing ground," . . . a spot secluded from the path, from 4 to 5 feet in diameter, and which appears to have been cleared of every blade of grass and smoothed as by human hands. . . . There he hides himself, and, armed with his blowpipe and poisoned arrows, awaits the arrival of the dancing party. He does not fire until they are so eagerly engaged, to all appearance, in their sport as to allow him to bring down four or five successively before the rest take alarm and disperse (ScF, 236). The toucan may be robbed of its feathers by shooting with a poisoned arrow (sec. 122) and allowing it to recover—perhaps to be shot and robbed again, subsequently.

184. Guacharo, salies (*Steatornis caripensis*). Brown, in the neighborhood of Ackar village, on the upper Mazaruni, thus describes his visit to the nesting places of these birds: We entered a gorge in the mountains . . . Our guide pointed out a cave in which he said the salies or guacharo birds live. Wishing to see them, we ascended the slope to it, arriving at a great vertical rent in the rocks some 10 feet wide and 50 feet high. . . . The Indians had a bush rope made fast on the cliff above, let down through a hole in the roof, which they used for climbing up to dislodge the young salies from their nests on the ledges. They eat these young birds and make oil from their fat (BB, 386).

185. Fish.—It has been recorded that on the Orinoco, after the breeding season, by just rowing over the shoals of fish in certain

creeks the stroke of the paddles will cause the fish to jump out of the water, and so fall into the boat (G, I, 279-280). On the Berbice it is not an uncommon feat to catch the large haimara by finding it asleep in the morning and placing two of the fingers through its eye sockets (Da, 120). The Carib Islanders would dive for fish among the rocks and pull them out of the crevices where they lay hidden (RO, 506). On the Rupununi River I have seen the imiri fish, "flatheads," thus caught by the Makusi: The Indian would grope in the submerged fenestrated rocks and pull out the creature with his hands alone or with a curved stick. Schomburgk also speaks of his men diving for *Hypostoma* (SR, II, 33). Every Indian child knows how to "feel" for fish in the river banks, trenches, etc. On the Takutu the Indians adopt the simple method of stealing from the otters the fish already caught by them. Otters have the habit of going into the water and bringing fish after fish to their eating place, where, when a sufficient quantity have been heaped up, they start eating. The Indians turn this peculiarity to their advantage. They carefully stalk the neighborhood of such places, wait patiently, and as soon as the otter has returned to the water after depositing his booty, take it away (SR, II, 36). An analogous theft is made by Indians of tortoises caught by the jaguar (sec. 215).

186. To entice fish within arrow shot, etc., their sense of sound, scent, or sight may be stimulated.

187. The only fish to be procured in this part [of the upper Mazaruni] was a short, small, stubby creature, having a spot on each side, being probably of the same family as the sunfish or lukunanni. The Indians procured some by bringing the woodskin to a stop close to a bank where rocks or sunken logs were numerous and then whistling softly, upon which these fish swam slowly out from their hiding places as if to inquire into the cause of the sound and were shot with the arrow or taken with a baited hook (BB, 392). The Parikuta, Makusi, Atorai, and Wapishana will also whistle for fish. The Parikuta would seem to have particular whistle sounds for particular fish, as electric eels (JO). The yarrau is undoubtedly lured by a sort of whistle which the Carib are particularly adept at practicing. In September, 1920, I was fishing on a tributary of the Barima and could catch nothing, when I chaffed my Carib boat hand about the superstition. He thereupon whistled a short, plaintive staccato note, and repeated it some six or seven times, when a couple of large yarrau put in an appearance. The sound of the rod lashing the water surface may give rise to similar results (sec. 193) for attracting fish.

188. In the height of the rainy season fish are scarce and can only be procured by means of the arrow, certain ants, spiders, or seeds of

various kinds having been previously cast into the water to entice them to the surface (BE, 39). Spiders are used for the purpose by Arawak and Akawai on the upper Demerara. Any spiders will do, so it is said. They are caught by flicking them with a small plait-work bat, somewhat after the style of a flycatcher, into the interstices of which they stick, and are kept in a little plaited basket specially made for the purpose. Five or six spiders, ordinarily the day after they are killed, are put into this basket, which, tied to a string, is slung over a forked branch onto the surface of the water. By holding the free end of the string, the fisherman bobs this a few inches up and down into the water, when the fish are attracted from all directions, and he can now use his bow and arrows. Among many such fish that are attracted by this spider bait are the tibikuri, cartabak, pirai, etc., but with the last mentioned care must be taken that the creature does not spring out of the water and snap half the basket away. Spiders can likewise be baited on a hook. Crab nuts, caracamata seeds, moku-moku, genipa fruit, and, according to one observer (IT, 238), that of the hevea and smilax can thus be utilized. A number of the seeds of the carapa or crab nut are pounded, and having been inclosed in a netting of withes, they are put in the water and soon attract the greedy morocot. An Indian stands ready with a light spear, which he lances into them (ScB, 183). This same ground bait is used for cartabak [*?Tetragonopterus*] on the Canje Creek (DF, 54). At the mouth of the Barima caracamata seeds are thus employed for morocot or osibu (SR, I, 138). The Indian, after having provided himself with a number of these caracamata seeds (aramatta of the Creoles, haiariballi of the Arawak, *?Diploptropis* sp.), selects a spot where no trees of this description are growing along the banks, and having everything ready throws a few of the fruits as an allurement on the water where there is little or no current, and while the morocoto rises to seize them, spears it (ScK, 239-240). At the falls on the Essequibo, etc., the fruit of the moku-moku is used as a ground bait for the *Myletes pacu* Jard. (SR, I, 300). When the river is high and heavy rain still frequently falls and dulls the color of the water so that even the Indian can hardly see the fish under the surface, . . . a basket of open wickerwork filled with the green apple-like fruit of the lana, *Genipa americana*, is thrown into the river and allowed to float with the stream. Standing in the bow of his canoe or woodskin . . . the Indian follows the floating basket. The lana seems to be a very attractive bait to fish, for they rarely fail to rise to it. As soon as this happens, a rush through the water indicating where the fish is, the arrow flies and the fish is almost invariably transfixed (IT, 237). Cartabak seem to be very fond of calabash pap, which is offered them wrapped up in pawpaw leaves.

189. During the rains between April and May on the upper Demerara the men at night light up the scene with torches, and with the use of the cutlass or knife capture fish by quakefuls (Da, 219). This is a common practice everywhere. Knives or other weapons are not, however, necessarily required with the torch; Spix and Martius speak of an Indian on the lower Amazon attracting a 12-pound fish (*Phractocephalus* sp.) to the shore by means of a light, and then seizing it in his hands (S-M, III, 1026). On the Orinoco a remnant of baize or colored cloth is tied to the end of a stick and held about a yard (*vara*) above the water surface while the canoe is being paddled along. Morocot and bagre [*Silurus bagre*] with their very large teeth bite into the cloth and are thus pulled into the boat (G, I, 279-280). Fly baits (sec. 192) would also fall into the category of fish being attracted by sight.

190. In addition to the bow and arrow, the harpoon arrow (e. g., for the pacu shot at the falls when the mourera is in flower), the harpoon spear (e. g., for morocot and other large fish), cudgels, spears, and cutlasses are employed for killing fish. The arrows specially constructed for this purpose are said never to be feathered. The arapaima (*Sudis gigas*) are taken generally with a harpoon fastened on a long pole, which is thrown from the canoe, and to which is attached a long line to give the fish play, as they are so strong that they can not be hauled in to be killed until they are weakened. This is generally performed with a club of hard wood with which heavy strokes are inflicted upon the skull. The canoes which are used in these fisheries are sometimes very small, with only a fisherman and a boy to steer. After the fish is killed, they sink the canoe, put it under the fish, and by shoving the canoe backward and forward throw out as much water as allows it to float; the rest is baled out with a calabash, and the fish is transported to the place of rendezvous (ScK, 198). A staging is often erected in or upon the banks of a stream or lake, whereon the hunters can watch and rest to take aim when shooting arrows. During the months that the Orinoco is on the increase (due to the melting of the snows in the higher reaches) the Indians, says Gumilla, use no other method than to carry, some of them, rough cudgels, and others their very curious spears. They proceed to the level plains where the waters have risen to the height of about a yard, and where in and among the blades of grass every kind of fish has come to feed and disport itself after so many months passed in the bed of the river. Here they are knocked over with the cudgels—for morocot (payara), bagre, and cachama (G, I, 287). In the Pomeroon, during the dry season when the rivers are low the Indians will take a torch at night and chop the sleeping fish with a cutlass.

The water will be about 8 or 10 inches deep, and the fish, lying close to the bottom either alongside or at right angles to a log or bank. Huri (*Hoplias malabaricus*), etc., are easily caught in this manner. On the Moruca River, when the first showers take place after the dry season, the yarrau (? *Hypostoma*, *Doras*) makes its way to the savanna, where it is especially sought after and chopped.

191. Hook and line.—Wallace, who traversed the area of the Amazon stream in the middle of last century, mentions the use of rod and line by the Indians who consume an enormous quantity of hooks. There are probably not less than 100,000 fishhooks sold every year in the River Uaupes; yet there are still to be found among them many of their own hooks, ingeniously made of palm spines (ARW, 339). The Carib Islanders, from a description given two and a half centuries ago, are said to have been wonderfully expert at fishing with the hook (RO, 506). On the Orinoco, Gumilla talks of lauláo (low-low, *Silurus* sp.), being caught with a large and strong hook (G, 1, 289), while in British Guiana within recent times there is the record of Indian fishhooks from Essequibo River being shown at the London International Exhibition of 1862 (CC, 51), and the mention (IT, 238) of most beautifully finished hooks of large size, 2 to 4 inches, being made by the Indians themselves . . . for low-low and arapaima (*Sudis gigas*). In all probability these larger hooks were made of pointed sticks tied at their center with a string similar to those we know to have been employed for alligator (sec. 217). At the present day the Waiwai, Parikuta, and Maopidyán use a similar small pencil, not necessarily pointed at the ends, and tied at the center to which the bait is attached. After swallowing, the stick is transfixed by pulling (JO). The Arawak speak of the hook as budehi, a term indicating any hooked or forked stick. Certain old Warrau have made me similar single and crossed double-pointed wooden pencil fishhooks identical with what they remember having seen and used in their early boyhood days (pl. 46). The hook and line may be used in various ways. Thus on Vituni Creek Dance mentions how a stout cord having several fishing lines, with hooks baited, and with a weight attached to one end, is let down into the water, and the other end tied to a small raft of floating wood. The motion of the raft up or down the river is the signal of a fish caught by one of the hooks. Low-low of several hundred pounds' weight are frequently thus caught (Da, 48). Instead of rafts, the Warrau in the Pomerón district employ emptied calabashes for floats (sec. 449).

192. Among the plant baits brought into requisition with hooks may be mentioned the flower of the large white water lily, crab-wood seed, guava, the green pulp of the calabash fruit (Da, 95), berries of the common calaloo (BB, 251) aramatta seeds (sec. 188) for morokot,

lana for pacu; the last mentioned, on the Rupununi, will even take a hook so baited in the rainy season, June and July. The Taruma specially cultivate in their fields particular seeds for fish bait alone (JO). A bunch of silk grass has also been mentioned as being made up into an artificial-fly bait for lukunanni, but the context (BB, 343) is not too clear as to whether this was made by Indians or Negroes. I have seen the unopened bud of the white water lily flower quartered and cut into a "fly" for lukunanni in the Pomeroon area (fig. 60 A), but this fish would not seem to be very particular, because it will often take an elongate bait, somewhat after the shape of a wooden bootjack, made from moku-moku (B). Wapishana will catch it with red macaw feathers tied to the hook (JO).

193. Finally, there comes the application of the hook for purposes of "jagging." Thus the following is an interesting description of

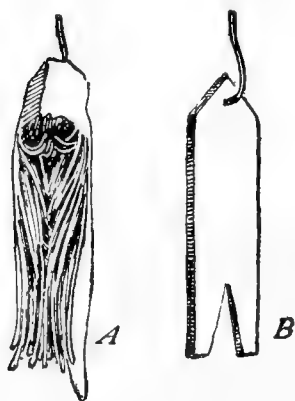


FIG. 60.—"Flies" for lukunanni.

the practice on the Demerara. An Indian in a woodskin was beating the surface of the water with a short stick held in his right hand, while in his left he held his paddle, controlling the craft. Suddenly he stood up and, picking up an arrow, made a lunge with it at something in the water, and drew out a long, brown, snake-like fish called yukunuri or eucanuri, nearly 4 feet long. It would seem that these fish swarm at various bends of the river in certain seasons of the year. The Indian comes to such spots with his short rod, barely 3 feet long, to the extremity of which is attached a line on which are fixed several

large hooks at intervals. He uses no bait, but lashing the surface of the water "to excite the curiosity of the fish," he every now and again jerks his line high out of the water, and in 1 case out of 10 manages to impale a yukunuri on one or more of the hooks (V. Roth). This lashing of the water with a rod, when used at all with a line, has been specially drawn attention to by Schomburgk on the Essequibo. He considers that the fish regard this commotion on the surface of the water as resulting from the falling of overhanging fruits, at which they will greedily rise to snap (SR, I, 307). This is not quite correct. It is certainly the lashing sound that attracts the carnivorous fish, but the simple, single "blob" only that draws the fruit-eating ones (JO). The Arekuna pursue the same practice of lashing the water with a rod. The surprise I myself experienced on first learning how fish can be attracted by sound has been shared by other observers, for it certainly was a canon of successful angling on any streams in the homeland that silence was golden and that

even the slightest noise or ripple on the water was prejudicial to a catch. Here in the Guiana creeks, on the other hand, it is of advantage every now and again to lash the water with the rod, presumably for the reasons just stated. The usual fish rod is generally made of lancewood or yarri-yarri (*Anaxagorea* sp.).

194. The simplest form of cylinder fall trap for fish, for catching haimara, is most ingenious and consists generally of a cylinder made of bark, or frequently of the branch of a trumpet tree (*Cecropia peltata*), which is hollowed out. The cylinder is about 5 feet long and from 6 to 7 inches in diameter. The lower end is stopped up and a live fish fastened to the bottom. It is now tied horizontally to a tree which stands on the bank of the river and kept about 2 feet below the surface. The haimara, attracted by the bait, enters the cylinder, but scarcely has it put its head beyond the center when the lower end of the cylinder sinks, and the fish, being inclosed with its head downward, can not make its escape and is secured (ScK, 255). The cylinder fall trap (pl. 43, fig. 1, A) of the Arawak and Warrau on the Pomeroon and Moruca is called ku-yamma, after the tree whence the cylinder (*a*) is obtained, this being a length of bark removed whole, after tapping, by slipping it from off the subjacent wood. The length of cylinder to be employed is gauged from the ground to the hunter's hip with a natural internal diameter of from 4 to 6 inches; its upper extremity is made to terminate in two points by means of curved cuts on opposite sides. Vertically below each pointed extremity and on a level inferior to the lower limits of the cuts, there is drilled a hole, through which are passed the supporting bark strip and a cross stick. This flat strip of a strong bark is tied below on the outside of the cylinder and looped above (B) onto the pointed pencil shaped trigger (*b*). The idea of the cross stick is to minimize the chances of any fish, when once caught in the cylinder, jumping up, knocking off the weight (to be presently described), and so making its escape. The bait is fixed onto the looped extremity of a piece of itiriti strand (C), which is gripped above in the split center of the key pin (*e*). The bait strand is always made of this material, and never of twine, which would twist, curl up, and stick to the underside of the cylinder when immersed in water. The frame or scaffolding consists of two sticks (A, *d*), split above on their sides to hold the crossbar upon which the cylinder hangs, and tied below with a bark strap. These uprights are never forked to support the crossbar, but are always simple and split like this, so as to allow of the crossbar being maintained in any position whereby the bark strap below may be rendered taut. To set the trap, which is employed in the shallow waters of a sluggish side stream or of the bush savannas, the framework is first of all firmly fixed, the crossbar wedged in at such a height that the lower

extremity of the cylinder, which is about to be suspended from it, is at a distance of a man's foot length from off the muddy, etc., bottom. Having passed the bait strand down the cylinder, the latter can now be hung from the crossbar by raising the tapering extremity of the trigger over it from behind, and maintaining it in position by means of the key pin placed at right angles between it and the two portions of bark strip. The bait strand is so arranged that the bait hangs inside at the same distance above the lower edge of the cylinder as the latter does from the bottom. The bark strap is next tied around the two uprights just taut enough to prevent the cylinder swinging to and fro, but loose enough to allow of its slipping vertically, the necessary degree being obtained by varying the position of the crossbar in the splits. A weight, in the form of a small log of comparatively heavy wood, to steady the whole affair is finally placed across the mouth of the cylinder. Entering from below, the fish grabs at the bait, pulls and pulls at it until the key pin slips down below the tip of the trigger, which, now released, allows the cylinder with its added weight to suddenly drop and so inclose and capture it. The bait used varies according to whether the trap is set at night or day. In the former case a fish bait is employed for imiri or lukuluku (snake fish), and a bird bait for imri or huri. In the latter case, a piece of lukuluku is almost a certainty for yarrau (WER, iv).

195. Spring hooks, in many cases with inadequate descriptions, are recorded from west to east of the Guianas, mostly, perhaps, among the coastal tribes. Their most important objective is to keep the fish once hooked above the water surface out of reach of their natural enemies (e. g., pirai), who otherwise would quickly make a meal of it. In one special trap (sec. 200) the voracity of other fish is prevented taking effect by the closure of the movable door, with which the creel, fixed under water, is provided. On the Berbice the flexible rod, the spring which locks the contrivance, was known as the fish hammock (Da, 19). The simplest form of spring hook would appear to come from the Pomeroon River Indians, who take an elastic and tough stick, of the thickness of a finger, to the thinner end of which a hook is attached, while the thicker end is driven in the bank of the river or perhaps tied to the branch or root of a tree under water. Just somewhat below the surface of the water a notch is made in the stick, and a similar notch at the thinner end where the hook is attached. The stick is now bent, and by means of the two notches it is kept in that situation, the hook and bait being a little under the water; but scarcely is it touched by the fish in its eagerness to seize the seducing morsel, when it is not only hooked but, in consequence of the jerk, the notches part from each other, and the fish is drawn by the elasticity of the rod out of its element, and there it

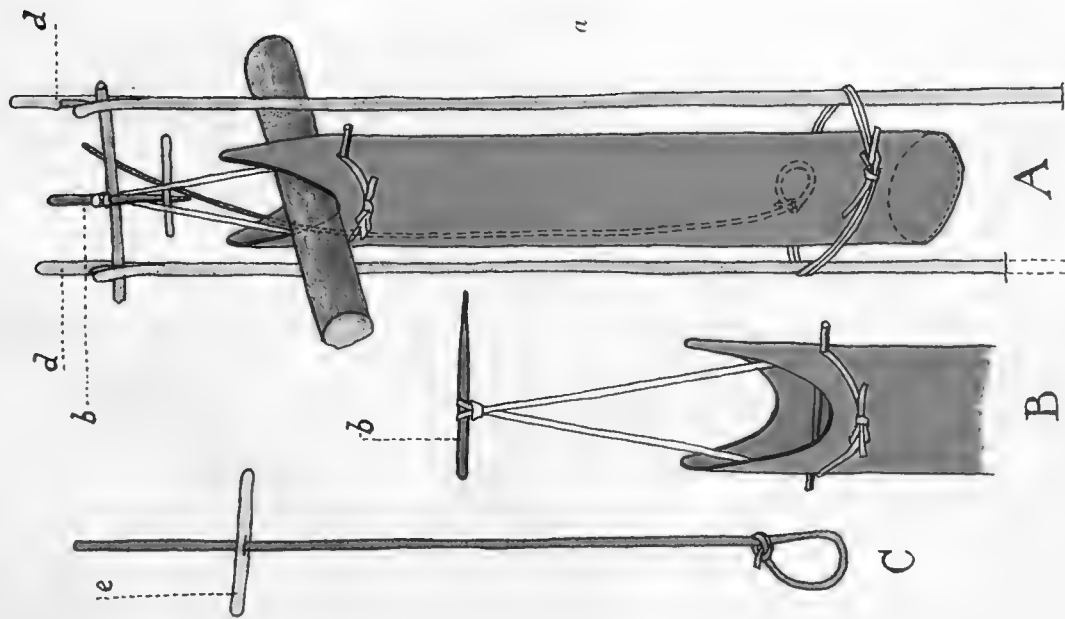


FIG. 1. Cylinder fall trap, Pomeroon River. *a*, Cylinder; *b*, trigger; *d*, key-pin.

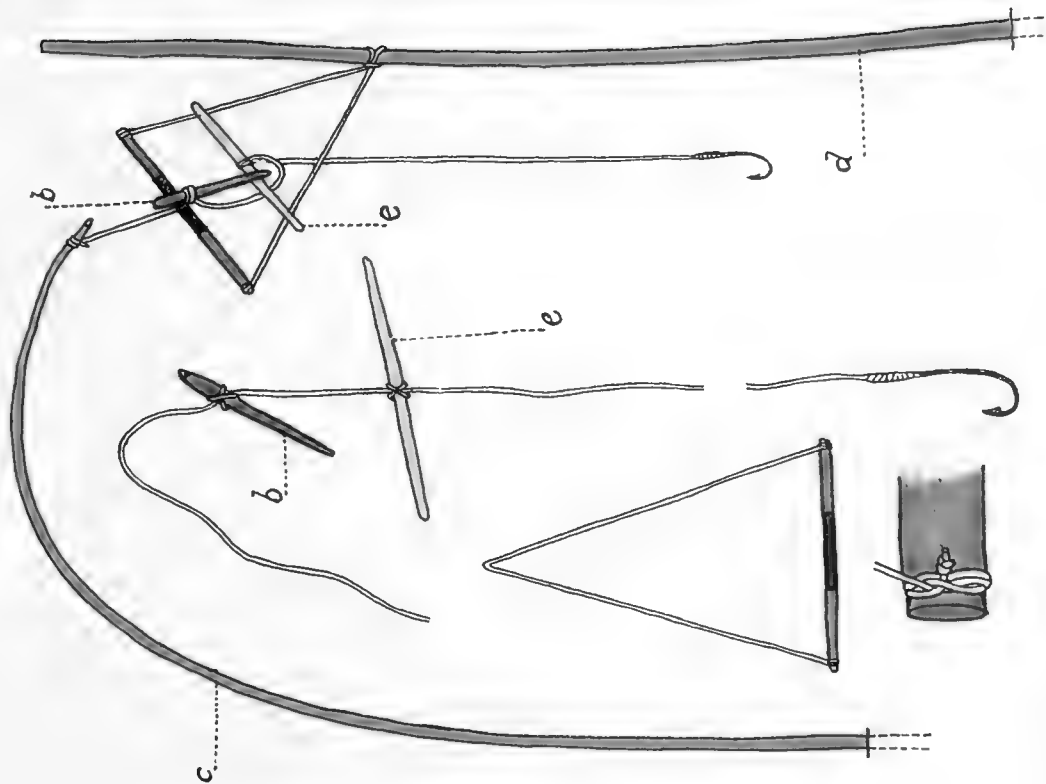


FIG. 2. Triangle spring hook, Pomeroon River. *b*, Trigger; *c*, spring; *d*, strong support; *e*, key-pin.



(Photo. by J. Ogilvie.)

WAIWAI PIG TRAP

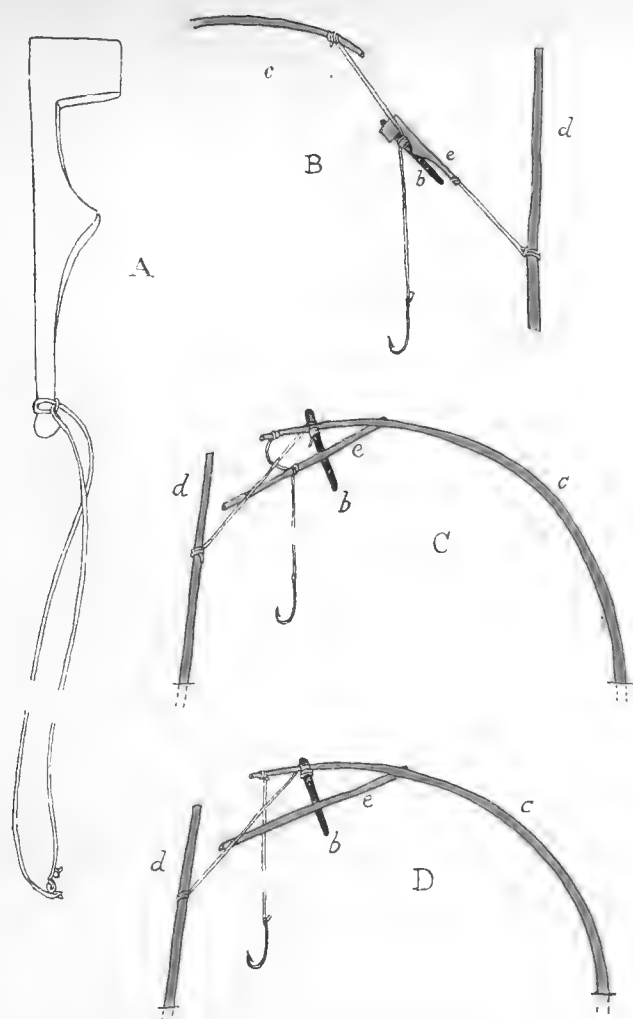


FIG. 1. Spring hooks of the Pomeroon. With F-shape catch, *A*, *B*; without it, *C*, *D*. *b*, trigger; *c*, spring; *d*, strong support; *e*, key-pin.

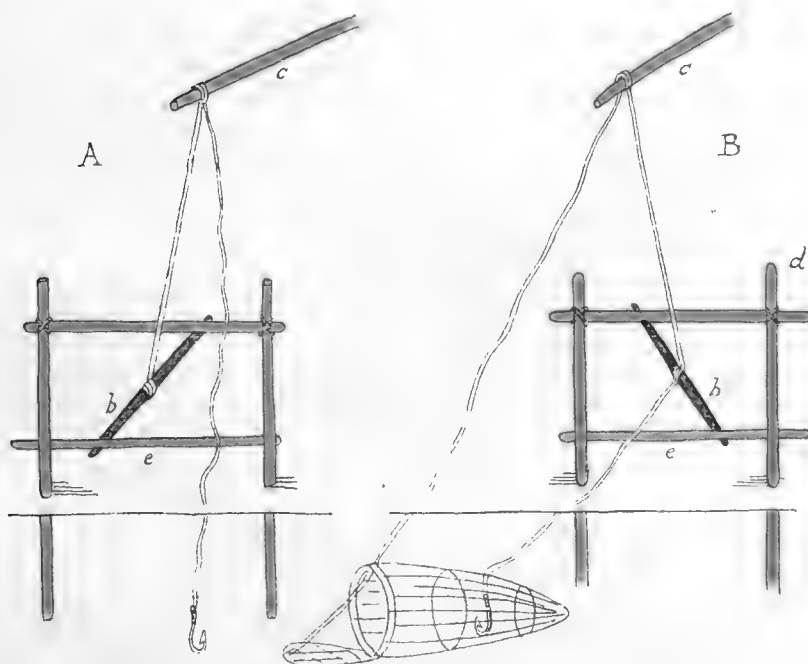


FIG. 2. Manner of catching fish by spring hook (*A*) and spring basket (*B*), Surinam. *b*, trigger; *c*, spring; *d*, frame; *e*, key-pin.

SPRING HOOKS AND SPRING BASKET

hangs until it is secured by the fisherman (SR, II, 424). A very early type of compound spring hook is reported from Cayenne (pl. 47 A), where the rod is locked by an inverted L-shaped arrangement (Cr, 516).

196. The triangle spring hook of the Pomeroon district Arawak, Warrau, and, during recent years only, of the Carib (pl. 43, fig. 2), is called *allausa* by the first named. It consists of a triangle, its firmly fixed support (*d*), a bait string, and a spring (*c*). The triangle, or "wife," consists of a thick bar or pencil about 6 inches long attached at its extremities to a piece of twine, the central portion of which is looped onto the strong support. For a reason which I have not had sufficiently explained, the middle third of the bar is always either painted black or has its bark intact. The bait string is looped above onto a trigger (*b*), and a few inches below it onto a key pin (*e*). After fixing the spring firmly into the mud, sand, etc., and attaching the bait string to its extremity, the trap is set by bending the spring well over, drawing the trigger from behind and under the bar of the triangle, and keeping its tapering extremity in position by means of the key pin placed at right angles between it and the two portions of twine. The hook is so arranged that it hangs about the length of a man's foot from the bottom. The fish pulling on the bait gradually drags the key pin farther and farther down until at length, with the release of the trigger, it is shot up with the rebounding spring to dangle above the water surface. Used at night in the river bends, with a fish bait, for catching *huri* (WER, IV). On the Essequibo, at Rockstone, I have seen the support and two sides of the triangle replaced by a firmly planted forked stick, the pencil of the triangle being substituted by a strong piece of wood tied across the tops of the fork prongs.

197. The Pomeroon Arawak and Carib will substitute an F-shaped piece of wood (pl. 45, fig. 1, A, B) for the triangle and bait with meat by day as well as by night for *haimara*.

198. Again, the Pomeroon Arawak will often discard triangle and F-piece and lock the trap (C) by means of the trigger (*b*) attached now to the strong immovable support (*d*). The most delicate arrangement of all (D), however, is where the bait string is attached direct to the end of the spring, the key pin (*e*) remaining independent of it (*d*). The hunter has to exercise great care when setting this trap, lest the spring should unexpectedly slip (WER, IV).

199. In Surinam there was used a square frame (pl. 45, fig. 2 A, B; pl. 47 C) formed of two vertical posts (*d*) fixed by a crosspiece firmly attached to their tops. With the one extremity of the trigger (*b*) pressing against the crosspiece and its other against the key pin (*e*) it keeps the latter in place parallel with and below the crosspiece.

So soon as the fish is hooked and drags upon the spring (*c*) the pull on the trigger is relaxed, the key pin falls, the trigger is released, the spring rises, and the victim is drawn out of the water.

200. A modification of this form of spring trap is adopted with certain creels having a movable door (pl. 45, fig. 2 B), described and figured by Stedman (pl. 47 B); also from Surinam. He speaks of it as the *mansoa* or spring basket (St, II, 227), but perhaps it may be of African introduction. *Maswah* or *maschoa* is the common Creole designation for all the simpler forms of creel. Here the bait string attached to the trigger leads to the inside of the basket, which is a fixture. Entering the trap, the fish takes the bait, draws on the bait string, and loosens the trigger, with the result that the key pin falls, the trigger is released, and the spring rising closes the creel door. In the Parikuta spring creels (sec. 205) the basket, with its

contained fish, is lifted bodily out of the water.

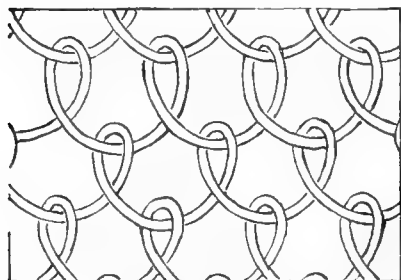


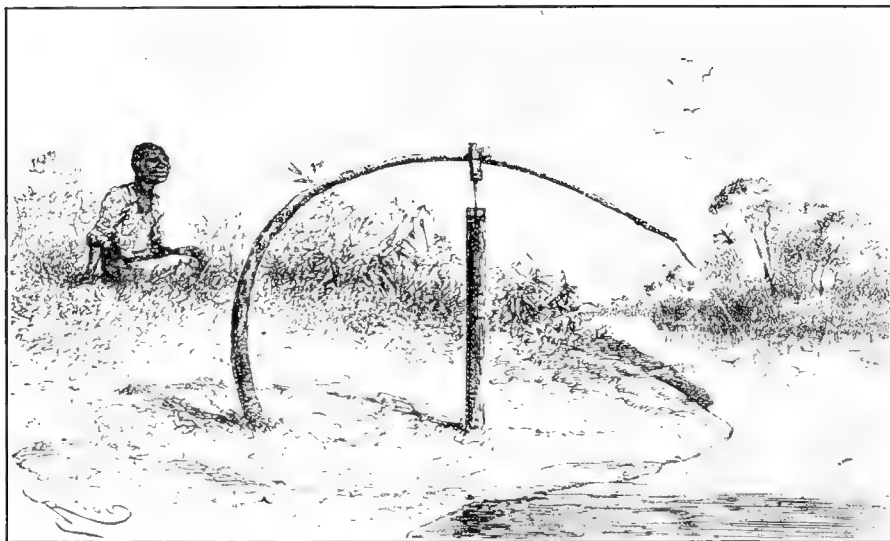
FIG. 61.—Chain-pattern fish net from the Uaupes River.

201. Fishing nets were apparently unknown, or, if they were, do not seem to have been reported in Surinam (AK, 188) and Cayenne (PBA, 157-158). The Arekuna, Wapishana (*tsa-tsairu*), Makusi (*pén-durr*), and Patamona employ small oval dip nets for collecting the fish, when, after being poisoned, they rise to the

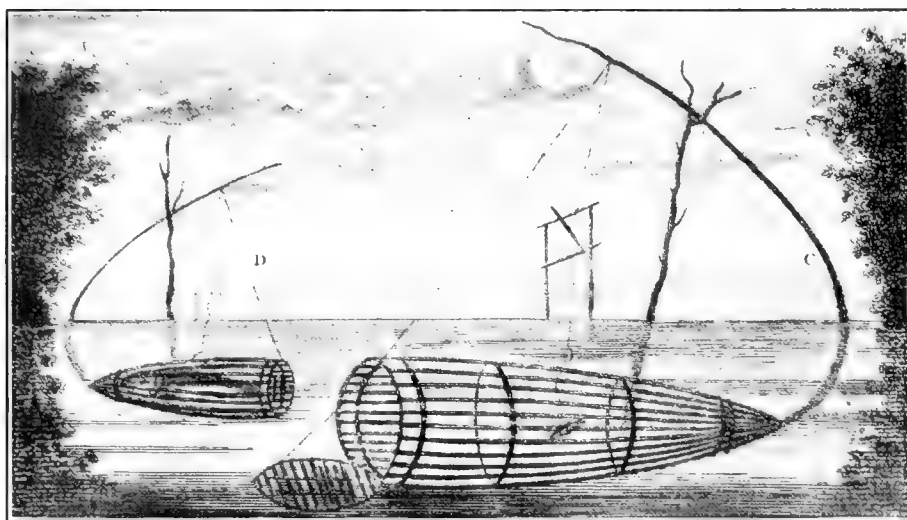
surface (pl. 48 D). These nets are woven of *kuraua* fiber on the same pattern as the ordinary English fish net. The only instance in which Schomburgk saw Indians of the interior make use of a net was among the Arekuna, who called it *penté*, with which they secured a number of smaller fish, perhaps 3 to 4 inches in length, which bury themselves in holes in the banks of the rivers. They knock with the net at the hole, and the alarmed fish rushes out into the net (ScK, 112). It would seem, however, that it was in the area of the Rio Negro that the net reached its highest development. Thus, among the Uaupes River Indians the hand nets used for catching fish are of two kinds—a small ring net, like a landing net, and one spread between two slender sticks, like the large folding nets of entomologists. These are much used in the rapids and among rocks and eddies, and numbers of fish are caught with them (ARW, 339). Illustrations of these nets are given (KG, II, 37, etc.). From their examination (pl. 48 A, B) it would appear that the larger are manufactured with a flat netting stick on the same pattern as the European fish net, while certain of the smaller ones are



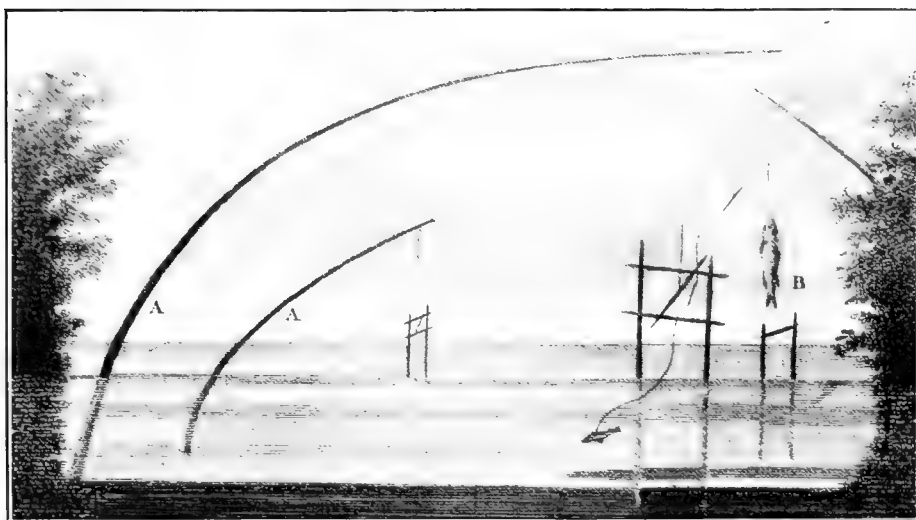
OLD-TIME INDIAN FISHHOOKS MADE OF PALM SPINES,
KOKERIT, ETC.



A, Roucouyenne spring hook for fish. (After Crévaux.)

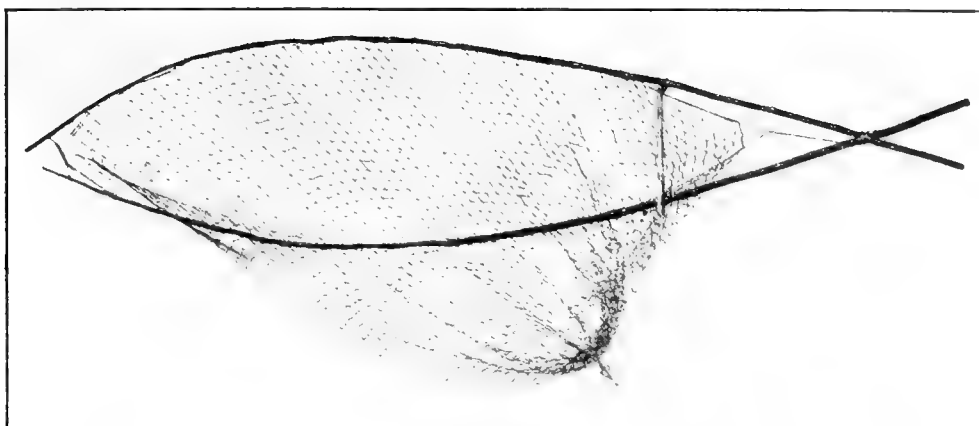


B, Manner of catching fish by the spring basket. Surinam. (After Stedman.)

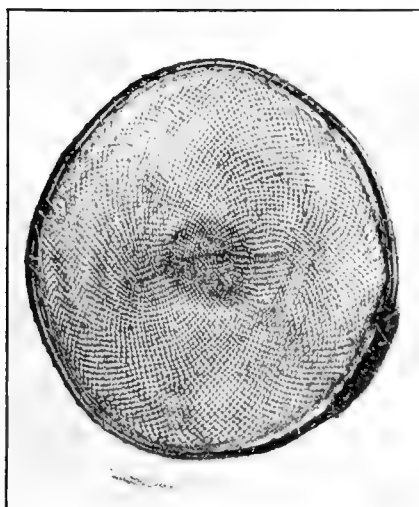


C, Catching fish with the spring hook. Surinam. (After Stedman.)

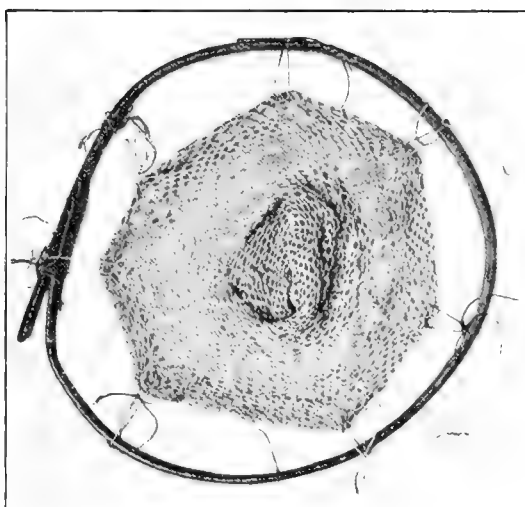
SPRING HOOKS AND SPRING BASKET



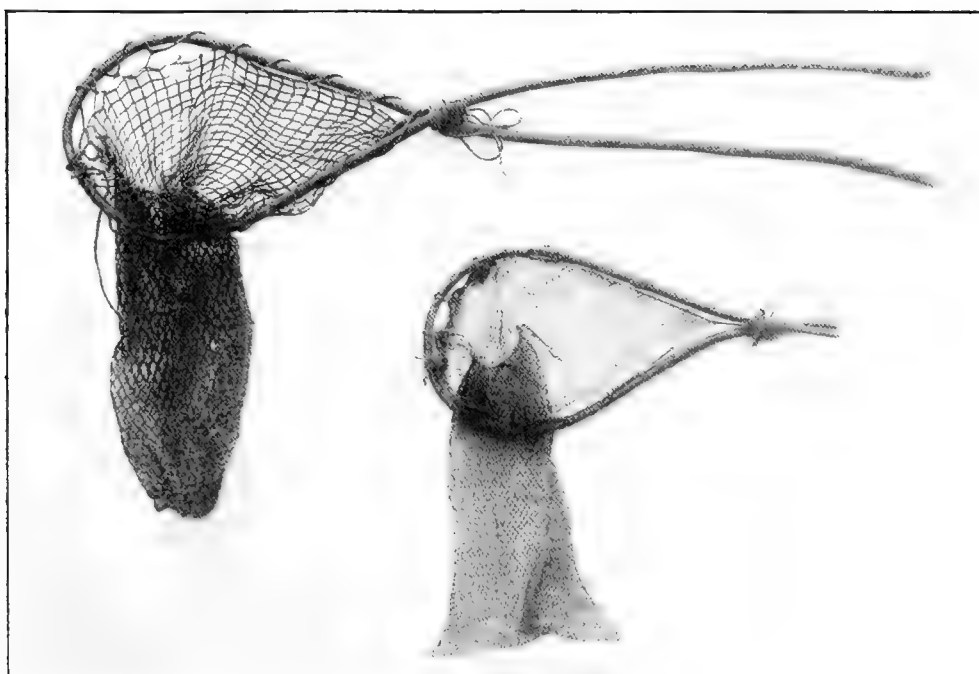
A



B



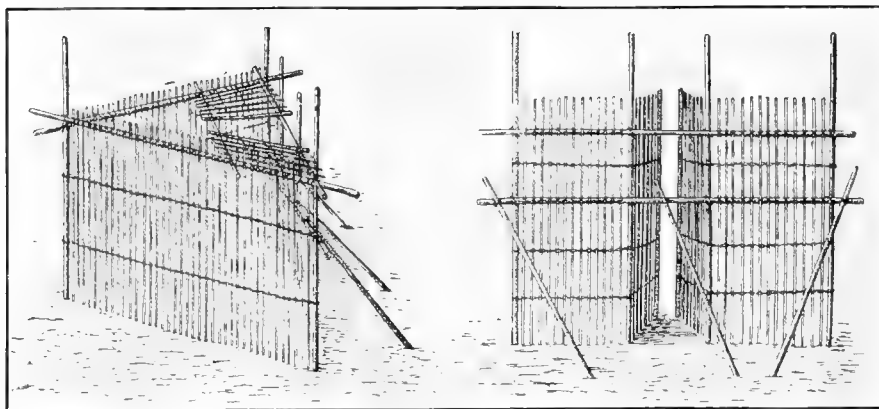
C



D

FISH NETS

A, B, C, Fish nets of the Uaupes River Indians. C, Represents a continuous chain pattern; the others are of the ordinary European fish-net type. D, Dip nets for collecting the fish after being poisoned. (After Koch-Grünberg.)

*A**B**C***FISH WEIR; FISH COVER BASKET**

A, B, Fish weir, Upper Rio Negro. (After Koch-Grünberg.) *C*, Basket for catching fish in very shallow water or mud.

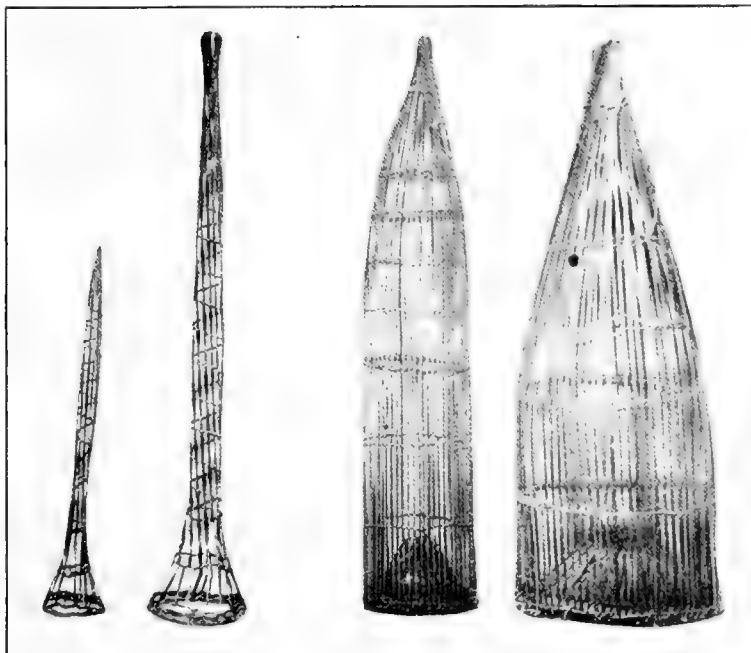
woven without a stick, on a different mesh (fig. 61). A conical shaped landing net or basket net, made of plaited itiriti strands attached to a long handle, is used by the Pomeroon Carib, Warrau, Akawai, and Arawak for bringing the fish up to the surface after being poisoned (sec. 423). Hilhouse has drawn attention to its use (HiA, 38).

202. Dams may be constructed of varying complexity with a view to inclosing an area of water, which may then be bailed out, and the fish caught. Thus, Indians will dam up a shallow portion of the swamp and bail the water out in their calabashes. For this purpose they all stand in a row with their backs to the dam and throw the water with incredible swiftness in between their feet backward over the dam (SR, I, 408). Schomburgk mentions a modification in the *modus operandi* of the dam as practiced by an old Makusi woman on the lower Rupununi. The brook Curassawaak was at a low level, and we observed, he notes, that she had her corial drawn across the stream and had closed every opening still left with rocks and dry branches. The place selected for the purpose was where the brook widened farther upward. The fish, on their passage down, finding the communication stopped, attempted to jump over the impediment laid in their way, but failing, they fell into the corial (ScG, 260). In the neighborhood of the falls on the upper Essequibo, and on the Corentyn, the pacu chooses certain sleeping places in shallow, swiftly running water. Having found such a spot, the Indians will gradually surround it with a stone dam, about 3 feet high, though sometimes higher, composed of big blocks of rock, the interstices of which are filled up with smaller ones, though none of the stones employed are, roughly speaking, less than a man's head. The work of construction is carried on during the daytime and may take two or three days to build, and the opening daily narrowed more and more until, when all is ready, and the Indians are convinced that many pacu are within, it is finally closed during the nighttime, when the fish can easily be caught (JO). A reference to such structures is to be found in the British Colonial Library (BCL, 114). Somewhat similar but temporary stone dams are erected for poisoning the same fish (sec. 210).

203. Weirs and fences.—The Indian will stop the mouth of the creek which opens into the river by fences, leaving a small opening about 4 feet broad. During the flood tide the fish pass into the creek in search of food. As soon as the ebb begins the Indian stops this outlet to prevent the return of the fish, which at low water are seen lying on the mud (Bol, 160). A palm named kiragha may be utilized for the fencing (ScK, 34). The portion of fence limiting ingress and egress may be replaced by a more or less permanent door. Thus, in Surinam, the contrivance consists simply of a kind of square in-

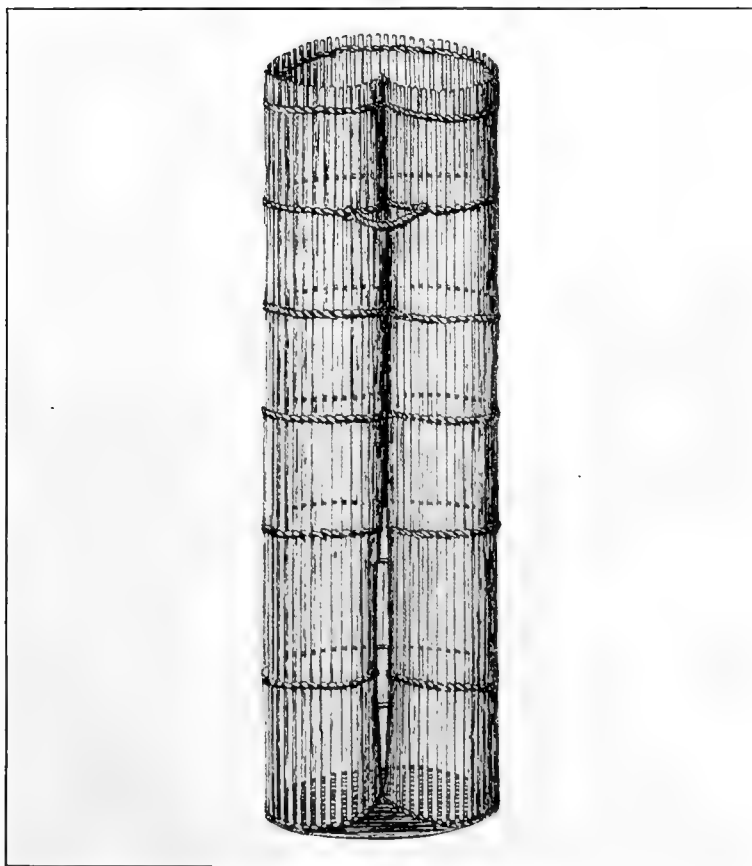
closure that juts out into the river, surrounded by long palisades of the manicol tree, tied very closely together by nebis ("bush rope"). In this fence is a large door, which is left open with the flood, and shut at high water, to prevent the inclosed fish from escaping (St, I, 374). Sometimes the door may be in the form of a "Venetian blind" (KG, II, 46). On the Orinoco, judging from the descriptions left us by Gumilla, some of these fences must have been of considerable size and strength. Being only employed with the receding waters to block the fish coming down the stream, they are built from bank to bank without any doors or intermediate free spaces. The Indians take note of the channels leading from the large lakes into the rivers, and block them with thick stakes, crossbeams, and supports, the whole village lending assistance with the work. As the turtle, lauláo (up to 50 and 75 pounds) and manati (from 500 to 750 pounds) come down from the lakes, whither, with the rising waters, they went in search of fresh food, they are blocked by these fences. Notwithstanding the great strength of these structures, it is lucky if they have not to be repaired two or three times a year, so great is the impact of the shoals of fish, turtle, and manati running against them (G, I, 281-282). Similar contrivances (pl. 49 A, B) are recorded by Wallace and others (KG, II, 42-43) from the upper Rio Negro, where, among the Uaupes River Indians, the fish weirs were known as cacoaris.

204. Creels, cages.—Cone-shaped wicker baskets, or reels, are met with from the Orinoco and Rio Negro into Surinam. Indeed, fishing with them is said to be practiced along the whole Guiana coast (DF, 226). The Adole Indians, some 50 leagues up the Orinoco from the River Meta, fix large baskets in places where side streams lead from the main channel, etc. These wicker baskets are woven from a kind of ozier twig, which is long and flexible and called bejuco, making them 2 yards (*varas*) deep and 1½ yards wide at the mouth. Attached to them are many strong rope handles in correspondence with the weight they have to support and the knocking about to which they are exposed (G, I, 291). The Uaupes River Indians, among their many other methods of catching fish, use a small cone of wicker, called a matapi, which is placed in some little current in the gapó. The larger end is entirely open. . . . Other matapis are larger and more cylindrical, with a reversed conical mouth, as in our wire rat traps (sec. 421), to prevent the return of the fish (ARW, 339-340). Illustrations of these creels or weir baskets (KG, II, 41) are furnished (pls. 50 A, B; 108 A). As already mentioned, the simpler forms are generally employed in connection with weirs or fences stretched across the creeks, being fixed over the gaps left here and there in the fencing (AK, 277). Those that are constructed with noninclosed smaller ends are stuffed with leaves, etc.,



A

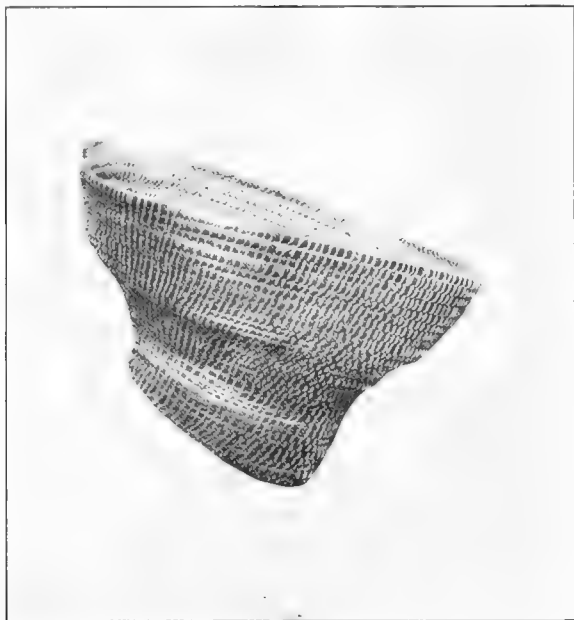
B



C

FISH CREELS AND BASKETS

A, B, Creels from the Uaupes River district. A, For smaller fish; B, for larger ones. Note the continuous weft in the former, and the multiple ones in the latter. (After Koch-Grünberg.) C, Basket for small fish. Rio Caiary. (After Koch-Grünberg.)



A, Net basket for crabs. Aiary River. (After Koch-Grünberg.)



B, Cassava juice forced by hand pressure through a circular sifter, in place of a matapi. Vaupes River district. (After Koch-Grünberg.)

CRAB BASKET; CASSAVA SQUEEZING BY HAND

before setting. To get the fish out whenever caught, these are removed. Occasionally these baskets may be employed with a movable door worked by a spring (sec. 200). An unusual form of "basket" of a rolled cylindrical shape (KG, II, 43-44) comes from the Rio Caiary, a branch of the Uaupes (pl. 50 C), where it is employed in the capture of the smaller-sized fish. The hassa fish can be caught in an ordinary basket as it rushes out of its "nest" when danger threatens its young (SR, II, 411, 412).

205. The Parikuta and Waiwai employ a basket trap, known as the *kanimá*, on lines indicated by the accompanying diagram (fig. 62). The basket, from $2\frac{1}{2}$ to 3 feet long, is suspended under water more or less horizontally and maintained in position against the crutch of two sticks fixed at an angle into the water bottom. The

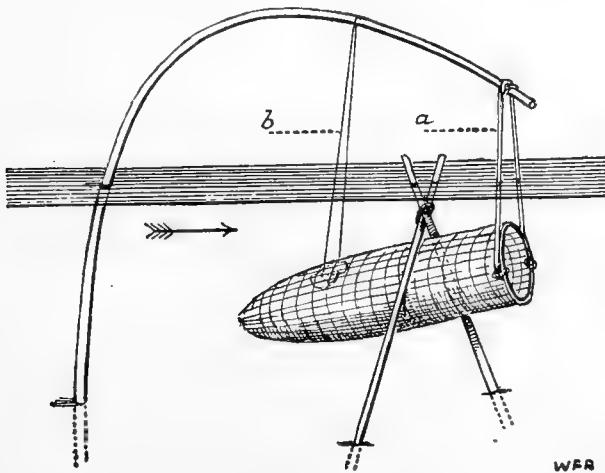


FIG. 62.—Diagram to show mechanism of fish spring-basket trap of the Waiwai.

suspension of the basket is effected by means of (a) a strong bush rope attached on either side of the basket mouth and at the center by means of a clove hitch to the tip of the spring; and (b) a delicate vine rope attached at its center to the bait, with its ends passing through the wickerwork of the basket and tied to the spring at some distance below the other one. The fish upon entering the basket and attacking the bait bursts the vine rope, with the result that, the spring now freed, the basket (with its contained fish) is jerked out of the water and kept out of reach of the pirai, etc. The mouth of the trap must be downstream (JO).

206. The Wapishana and Makusi use an open-mouth basket (pl. 49 C) made of kokerit to throw over the fish in very shallow water or mud. The creature is then caught by the hand, inserted from above. The former tribe speak of it as *du-m*, the latter as *tu-mu*.

207. Puddling is practiced by the Wapishana. They will drag a savanna tree (e. g., the "sandpaper" or curatella) backward and forward across a pool, and by so muddying the water force the fish to the surface (JO).

208. Many of the vegetable poisons for catching fish—a practice which extended even out into the islands (RO, 507) can not, unfortunately, now be identified, the particular names handed down to us being more or less colloquial. But, whatever the poison, it must be remembered that some fish may remain immune from a kind which affects others (SR, I, 408; II, 153). Schomburgk has pointed out that these poisons not only affect the respiratory but also the nervous system, in that the fish's pupils are generally widely dilated (SR, I, 408). Kappler drew attention to the fact that crabs and crayfish are affected by the *Lonchocarpus* poison (AK, 190). Timbo is the lingua geral and barbasco the Spanish term for vegetable poisons in general. On the upper Rio Negro these would include species of *Paullinia* and *Serjania* (KG, II, 49).

209. Among those plants that I have been unable to scientifically identify are the cuna and bascara of the Orinoco, the liane of the Corentyn, and the sinapou of Cayenne. Cuna, writes Gumilla, grows after the style of lucerne (alfalfa) and produces a root similar to rape (nabos), except in color and taste. These roots, pounded and washed in water, have so strong an odor as to intoxicate and stupefy the fish, which can then be seized by hand. Others which manage to escape upstream are knocked over with sticks by a row of Indians waiting for the purpose; while those that rush downstream are intercepted by a fence placed in suitable position, and if they try to jump it they fall onto a large frame fixed on top. Another method of using it is to make a dough of pounded, cooked maize, and another of similar material but mixed with some of the root. Proceeding to a neighboring stream, the Indians will scatter in it some of the harmless mixture and so attract a number of medium-sized fish. They will then throw in the poisoned mass, while at the same time the children, each with its basket, enter the water some 4 paces lower down. The fish are stupefied, and so carried downstream and picked up at leisure (G, I, 282). Bascara is another poison root. It is of the same color and make as a vine stem, and used in the same manner as the cuna—i. e., pounded and washed in water (G, I, 282). The nebi ("bush rope"), called liane, has the same property of stupefying fish [as the *Lonchocarpus*], but its effect is not nearly so strong (StC, I, 318-319). Chips from the trunk of the moraballi (?) are said to be used by Arawak on the Essequibo coast, and the roots of the sinapou have been reported from Cayenne (PBA, 157-158; Cr, 45). Wild agave (?) seeds have been mentioned to me as a fish poison on the Demerara River.

210. The following are certain of the fish poisons that have been identified: *Lonchocarpus* of various species (e. g., *densiflorus*, *rufescens*). It is known as haiari, heri, or nako (StC, 1, 318-319), as nekko in Surinam (AK, 189), apparently identical with the *Robinia nicou* (Cr, 45), or inekou, of Cayenne (PBA, 157-158). One of the earliest descriptions of its practical application is written by Hilhouse in connection with the catching of the pacu. The pacu is generally taken with haiari in the following manner: The Indians select a part of the falls where the weya, an aquatic vegetable eaten by the pacu and other fish, is plentiful and traces are visible of the pacu, which is gregarious, having lately fed. They then enclose this place with a wall of loose stones, a foot above the surface of the water, leaving two or three spaces about 10 feet broad for the fish to enter. For these spaces they prepare parrys, or wooden hurdles, and about two hours before daybreak they proceed silently to stop the apertures with them. The fish are thus inclosed in a temporary pond, which is inspected at daybreak, and if they are found to be in sufficient number to pay for the haiari they commence beating it. . . . They beat it (these haiari roots are about 3 inches in diameter) with heavy sticks until it is in shreds like coarse hemp. They then fill a corial with water and immerse the haiari in it. The water immediately becomes of a milky whiteness, and when fully saturated they take the corial to the spot they have selected, and throwing over the infusion, in about 20 minutes every fish within its influence rises to the surface and is either taken by the hand or shot with arrow (HiA, 30). Certain of the stone dams mentioned in section 202 may have been employed for "poison" purposes. The haiari can also be used in any inclosed piece of water, in ponds after the inlets have been stopped (BW, 155), or in a small stream, at the turn of the tide when there is little or no current (Br, 143). Dance mentions three kinds of haiari bush rope—a white, red, and black (Da, 332).

211. *Clibadium*, various species; e. g., *asperum*, *surinamense*; also known as quanami (BE, 39), gonami (HiC, 237), conami (Cr, 45; AK, 189; PBA, 157-158; IT, 234), konami or kunami (Da, 212), and on the Pomeroon as kunalli. Whereas Schomburgk, Dance, and Bernau speak of the leaves being put to use, as I have myself observed, Im Thurn and Barrère refer to the employment of its seeds and fruit. The small shallow pits, wherein the leaves have been pounded, are much in evidence around the dwellings of the upper Pomeroon and Moruca River Carib. After pounding they chop the leaves to a pulp, mix with finely cut flesh, and make up into small balls, which are thrown into the water as bait. It is greedily swallowed by one species of fish (the *Leporinus friderici* Agassiz), which, coming to the surface, dies (SR, 11, 434). On the Demerara a

few leaves of the cumapuru bruised with the leaves of the kunami shrub and the dried light pericarp of the arisauru (*Pterocarpus guianensis* Aubl.), to give buoyancy to the mass, are the ingredients of the floating pills cast into the river along with pills of dough to tempt the greed of the fishes and to paralyze and kill them (Da, 212). So, again, Indians will catch the larger kind of grasshopper, and having extracted the inside fill the belly of the insect with the quanami, a strong narcotic plant, the leaves of which they make into a paste and throw it into the river. The fish has no sooner swallowed its prey than it begins to feel the effects of the poison and in a few seconds expires, floating on the surface of the water (BE, 39). But, on the other hand, independently of any actual bait, the water itself may be "poisoned" with the *Clibadium* on similar lines as the *Lonchocarpus*.

212. *Tephrosia toxicaria* Pers. is employed by the Makusi Indians, who call it yarro-conalli, for poisoning the yarro (yarrau), which is not stupefied by the milky juice of the haiari (SR, II, 153). [Strange to say, a fish poison of the same genus is employed by the North Queensland blacks.]

213. *Phyllanthus conami* Sw., recorded by Schomburgk (SR, I, 347-348), and other species, are known as cumapuru (Da, 212), kunapuru (Mak.), or cunaparu (J. Rodway). I take it to be identical with the gunapulu (of Surinam) noted by Kappler (AK, 189), the konabáro of the Arawak, the aru-aráni of the Warrau. The two latter nations employ it as follows: After the flowers have blossomed, the leaves are said to be "stronger," and they are then very tightly packed into a "crab" or manicol-leaf quake. If in running water, this is fixed with a stake pierced through it and so held with the one hand just above the water. By means of a pointed stick, grasped in the other hand, the leaves are all "jerked" until the whole basket is broken away, the milky juice being at the same time expressed from the leaves. It is said to be a very powerful poison. If in a pond, the leaves are not pinned with any stake, but just jerked as before.

214. *Mullera moniliformis*, the (?) haiari-balli of the Arawak, has been mentioned as a fish poison (IT, 234), but the statement is certainly denied at the present time by members of this nation on the Pomeroon and Moruca.

215. On the Amazons the Indians catch the full-grown turtles with the hook, net, or arrow. The last is the most ingenious method and requires the most skill. The turtle never shows its back above water, only rising to breathe, which it does by protruding its nostrils almost imperceptibly above the surface. The Indian's keen eyes perceive this, even at a considerable distance, but an arrow shot obliquely

would glance off the smooth flat shell, so he shoots up into the air with such accurate judgment that the arrow falls nearly vertically upon the shell, which it penetrates, and remains securely fixed in the turtle's back. The head of the arrow comes off its light shaft, to which it is attached by line, and the shaft floats on the surface, etc. (ARW, 324). This shooting of the arrow into the air, practiced also in the Guianas, is mentioned in some of the Indian legends (WER, vi, secs. 30, 145, 330). Gumilla has recorded how, on the Orinoco, the Otomac will dive after a turtle in the water, turn it over, and, supporting it with one hand, will bring it to the bank with the other hand and his feet (G, i, 180). A similar statement is made by Bates from the lower Amazon. It is said that the Muras dive after turtles, and succeed in catching them by the legs (HWB, 168). In addition, turtles on reaching shore may be sneaked upon by the hunters. Thus, on the Essequibo, if the Indians wish to catch the creature itself, they bury themselves in the sand at a considerable distance from the water, and when it is nearest they suddenly arise and give it chase. When they have overtaken it they turn it up, and, fastening two sticks in the apertures of the head and hind parts, leave it there until morning (BE, 168). Humboldt records the following: Jaguars . . . follow the arraus (large fresh-water turtle) toward those places on the beach where the eggs are laid. They surprise the arraus on the sand, and in order to devour them at their ease, turn them in such a manner that the undershell is uppermost. In this situation the turtles can not rise, and as the jaguar turns many more than he can eat in one night, the Indians often avail themselves of his cunning and avidity (AVH, II, 192). An unusual method of capturing tortoise with dogs is mentioned from the upper Rupununi at Annai village, where B. Brown speaks of being shown a pen or crawl full of tortoises, all of which had been procured by the aid of a small black and white dog belonging to an Indian. This dog, when taken into the forest, set to work to search by scent for tortoises, and as they are very numerous it would trace out numbers of them in a day, thus keeping its master well supplied with these animals (BB, 146). Indications on the surface sand will lead the Indian to the underground nests, but these are not seldom found to be already robbed of their eggs by the jaguar and certain hawks.

216. Schomburgk describes how, even when the river current often carried him and his crew with the greatest swiftness, his Carib seldom missed their aim with bow and arrow at the poor iguana (*Iguana delicatissima*) feeding on the leaves of some favorite tree or lurking for insects (ScG, 273). On the Cuyuni, Brown says that his men and the Indians had a most cruel way of preventing captured iguanas from escaping by slitting down the side of two fore

and two hind toes on opposite feet, and passing the toes between the bone and sinew in such a manner that they could not be disengaged. . . . The manner in which they were slaughtered, viz, by inserting a hard pointed stick up one nostril into the brain, was also a very cruel proceeding (BB, 14). Iguana eggs (*Iguana tuberculata* Laur.) are eaten (SR, I, 303; II, 171; ScO, 47). It was Carib who caught lizards of a peculiar kind, with slipknots at the end of sticks, and placed them in baskets, previous to feeding on them when a sufficient quantity had been obtained (BB, 179). On the Pomeroon I have seen a trap (fig. 63) used by Portuguese and blacks for catching the

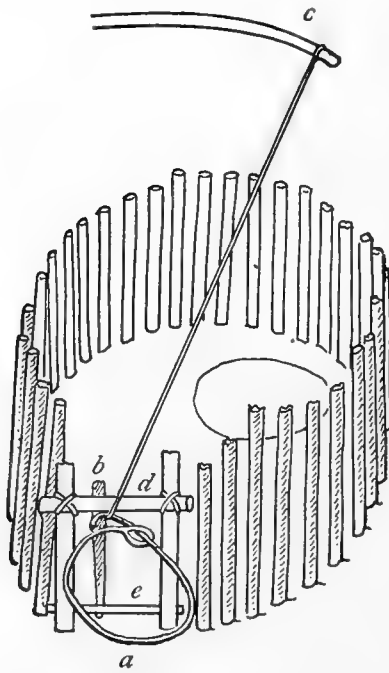


FIG. 63.—Trap for iguana.

iguana that prove very destructive to their fowls, but whether it is of mixed Negro or pure Indian origin I can not say. At the mouth of a small inclosure, made of closely apposed twigs stuck firmly into the ground, is fixed a frame, by means of which a trigger, attached to a spring, holds the key pin in check. Attracted by the bait inside, usually a fowl egg, the salapenta has to pass through the running noose attached to the trigger, and while doing so presses on the key pin; this releases the trigger, the spring flies back, and the noose, now tightened, hoists the creature in mid-air.

217. Alligators, or caymans, the name which the Indians gave them (St, I, 145), form no unimportant item of the aboriginal larder, both flesh and eggs being much relished

(AK, 127). Schomburgk apparently emphasizes the tail as being the part specially fancied by the upper Pomeroon Carib (SR, II, 425). The following delightful account of the capture of the reptile is given by Gumilla: The Otomac and Guamo Indians, who eat the flesh as a delicacy, in wintertime and during the rise in the river, when fish are scarce, catch it as follows: They hunt it in pairs, with a strong rope of manati hide having a loop at its extremity. One man carries the rope and the other the end with the loop. Managing to approach the creature lying in the sun without being seen until it is just about to fall into the stream, the Indian who carries the loop will jump upon it in all security, because the animal can not turn its head to bite him nor fold up its tail to strike him. What with the

weight of the Indian on top, the cayman soon touches bottom, but not before the noose has been tightened around its jaws and three or four knots added for better security (G, II, 223). The same author also reports the destruction of these creatures by poison. They are shot in pools with arrows made of poison bamboo (*Caña brava*) . . . a poison so formidable for caymans that however slightly the arrow pierces either the side of the shoulders or the eyes, the creatures will in a short while float to the surface dead (G, II, 220).

Reliable accounts show that alligators can also be caught with contrivances similar to the spring trap used for birds, though, of course, on a much larger scale, both in Cayenne (Cr, 265, 516) and on the upper Rio Negro (KG, I, 229). So also they may be caught with special hooks, single or multiple. Schomburgk describes one of the former in use among the Makusi on the Cotinga, where a hardwood stick, about a foot long and pointed at both ends, was tied at its middle to a rope and then bound round and round with strips of flesh so as to make it look like part and parcel of the rope, the other end of the rope being tied to a tree. A similar contrivance seems to have been employed on the Orinoco, where the double-pointed stick was known as the *tolete* (G, II, 220). Waterton was the first to make mention of the use of multiple hooks on the Essequibo—a method which I have noticed as still existing among Carib on the upper Pomeroon. But let Waterton give the account in his own inimitable way: The day was now declining apace, and the Indian had made his instrument for taking the cayman. It was very simple. There were four tough pieces of hardwood, a foot long and about as thick as your little finger and barbed at both ends. They were tied around the end of the rope in such a manner that if you conceive the rope to be an arrow, these four sticks would form the arrow's head, so that one end of the four united sticks answered to the point of the arrowhead while the other ends of the sticks expanded at equal distances round the rope (fig. 64). Now it is evident that if the cayman swallowed this—the other end of the rope, which was 30 yards long, being fastened to a tree—the more he pulled the faster the barbs would stick into his stomach. This wooden hook, if you may so call it, was well baited with the flesh of the acouri, and the entrails were twisted round the rope for about a foot above it. Nearly a mile from where we had our hammocks the sand bank was steep and abrupt, and the river very still and deep. There the Indian pricked a stick into the sand. It was 2 feet long, and on its extremity was fixed the machine. It hung suspended about a foot from the water, and the end of the rope was made fast to a stake driven well into the sand. The Indian then took the empty shell of a land tortoise and gave

it some heavy blows with an ax. I asked why he did that. He said it was to let the cayman hear that something was going on . . . (W, 262).

218. Frogs and toads, as well as their larvæ and eggs, constitute an equally interesting feature of the Indian menu. From Enaco village, toward the upper Potaro, B. Brown describes certain pits for trapping frogs in connection with a small, dry, circular pond, having its bottom all grass covered. It was situated in a small clearing some 50 yards in diameter, and had evidently been artificially made. In the center of this the guide paused and directed my attention to numbers of small circular pits that had been dug all over the bottom of the pond. These averaged from 3 to 6 feet in diameter and from 6 to 8 feet in depth. Leaning against a tree on one side was a bundle of sticks with slightly curved ends. Selecting one, the

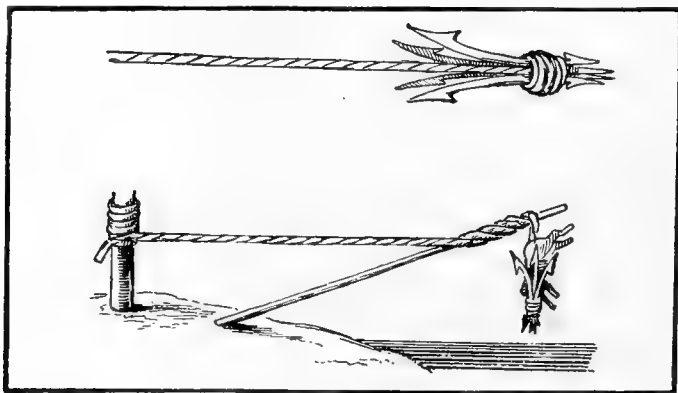


FIG. 64.—Multiple hook for alligator. (After Waterton.)

guide stooped down, and stirring up a large mass of gelatinous froth in the bottom of a pit, dislodged a small flesh-colored frog, which he tapped on the head. In the grass around the pits' mouths were also patches of this froth containing little white frogs' eggs about half the size of peas. These frogs are considered great delicacies by the Indians, and the pits are dug to entrap them when they come to the spot to deposit their eggs (BB, 196). After being gutted and prepared with the "butter" from turtles' eggs, certain frogs' larvæ are eaten by Indians on the lower Amazon (S-M, III, 954). In Surinam, when meat and fish are scarce, the Trio eat toad eggs raw (GO, 5).

219. Snakes.—Brett reports having seen a man creep on his hands and knees and capture a kolokonaro (land camudi) by means of a noose which he dropped over its head with a forked stick as it was raised to look at the intruder (Br, 19). Schomburgk speaks of his Indian servant throwing a rope sling over the head of a camudi, 16

feet long (ScO, 219). I am in doubt as to whether snake flesh is ever eaten, even by Carib.

220. Crabs are sought for particularly at those two seasons of the year when they are said to "march." As fast as they can be picked up on these occasions from the mud flats, etc., they are packed into quakes (baskets). Large parties of Indians will join in these expeditions. Roasting in the ashes is the usual preparation before eating, but it is not rare to see them eaten raw. They may also be caught in nets or in special baskets (pl. 51 A) on the upper Rio Negro (KG, II, 42). To understand the meaning of the crab's march, i. e., according to the belief and accounts given by the Warrau, it must be remembered that from January to June these luscious crustaceans are to be found only in their holes—one in each—along the mud flats of the Guiana coast line. They come out to feed at night, and their special food would appear to be the fallen seeds of the mangrove, the courida (*Avicennia*), and kai-ára. It is not known whether each returns to its own lurking place, but the Indians state that if a hole be emptied of its crab and visited a few days later, it will be found occupied. Crabs can only be dragged out of their holes with the naked hand during the course of the early morning, say, before 10 o'clock, because, as the Warrau say, they "work with the sun"; i. e., starting by lying on their stomachs, with claws down, they gradually turn over, and by midday rest on their backs with claws up. In July, with the first low tide after full moon, the first "march" for the year takes place. The crabs, emerging from their holes at dead low tide, run down along the mud flats in shoals of thousands and thousands, pushing, edging off, biting, and fighting one another, all making for the water, and returning with the same washing tide. A similar procedure takes place at the next low tide. The object of the march is said to be the capture and impregnation of the female, whose eggs may now be said to be fertilized, and from this month onward until December the mudholes will be found occupied by two crabs—a male and a female.

In August the chief march of the year takes place with the first three low tides after full moon, and it is especially in this month that the Indians from the upper reaches of the coastal rivers will come down for their share of the spoil. In September there may be four marches under similar conditions of moon and tide, but by this time the majority of the shellfish will have mated, and the numbers taking part in the march accordingly much fewer. So also in October there may be occasionally two final marches. About Christmas time the eggs are hatched, and now the tiny baby crabs will start burying themselves in the mud, and as they grow the size of the occupied holes becomes proportionately increased, and here they will remain in

single blessedness until the following July, when the whole cycle of events already described once more takes its course. Schomburgk gives the scientific explanation of the so-called crab season (SR, II, 443).

221. Mollusks.—The pretty little periwinkle (*Nereis*), judging from the heaps of them met with in the Pomeroon Carib middens, must have constituted a favorite article of diet in bygone days. It is still eaten. The large snails, *Ampullaria urceus* Fers (SR, I, 196) and *A. orinoccensis* Ziegler (SR, II, 425), are noted as excellent pick-me-ups after a drunken orgie (sec. 281).

222. Earthworms.—Wallace, when speaking of earthworms as food for the Uaupes River Indians, says: "Nor is it only hunger that makes them eat these worms, for they sometimes boil them with their fish to give it an extra relish (ARW, 201). On Awarihuta Creek, which flows into the upper Parima, the Indians set to work assiduously to dig up the earth at the water's edge with long sticks, flattened at the end. . . . I found (says Schomburgk) they were searching for large worms which lie concealed in the mud. They seemed to me like our *Lumbricus*, or rather *Gordius*, only much thicker. After washing off the mud the Indians ate them raw, and apparently with much delight. . . . On a small babracote we observed them smoking thousands of that species of worm which I have before described (ScF, 230-234).

223. Schomburgk refers to the caterpillars of a butterfly, something like our cabbage-white, being eaten (SR, II, 158). He speaks of another caterpillar, collected at the beginning of the wet season by the Makusi, which is considered an especial titbit by both old and young (SR, II, 120). Some species of *Sphinx* caterpillars were eaten by the Indians after roasting (App, II, 415). On the road to Karicaparu I watched the Makusi women and Patamona men eating the riku, the 4 to 4½ inch long caterpillar found in clusters on the trunk of the duru tree, a sort of "pump wood," an insect which ultimately, so the Indians say, develops into a yellow and green butterfly. It may be eaten raw in its entirety, after wrapping in a leaf and roasting, or it may be boiled in the "pepper pot." In the latter case the entrails are squeezed out behind previous to cooking. So, again, in the savannas on the way to Roraima, the Makusi and Patamona collected among the grass a small caterpillar that was just about to enter on its pupal stage. This was during early July. The Makusi called it iki. It was eaten raw and apparently much relished. Quelch says that with the Arekuna a small red and black grasshopper, which is sometimes met with in clusters on the low bushes, appears to be a very great delicacy when cooked (Ti, 1895, p. 152). In the neighborhood of Wailang Creek, on the Roraima road, my Patamona guides

collected a particular kind of grasshopper, the kairau, which they devoured raw.

224. Among beetles, species of *Passalus* and *Cassandra* are considered delicacies and eaten raw by the Wapishana of the Takutu (SR, II, 58). The larvæ of different weevils, as well as the beetles feeding on the water lily, are eaten by the Surinam Carib (AK, 188). But the most important article of diet supplied by this class of insect is the grub of the *Calandra palmarum*, known to the Creoles as the gru-gru. In Surinam it is called the cabbage-tree worm (St, II, 23). The Warrau speak of it as mo and the Arawak as otokuma. This Arawak name has nothing whatever to do with that of tabuka, the term applied to the heart of any hard-timbered wood, nor has the Warrau term any connection with that of the drink. Warrau ohiju-hobi, derived from the mauritia palm (cf. IT, 267). To get this grub out of the ite palm, which has to be felled for the purpose, a hole some 6 inches in diameter is cut right down the heart at a distance of about 5 or 6 feet from the cut end, the distance varying with the hardness or softness of the trunk, the former portion being useless. The beetle will enter here to lay its eggs, and the Indian will return in about a month or five weeks' time to remove the grubs, which are eaten. The beetle is not especially associated with this particular tree, except that for some reason or another more eggs (30 to 40) come to growth and maturity than with the turu (*Ænocarpus*), kokerit (*Maximiliana*), and many other palms, even the coconut, all of which must be previously felled to harbor the insect. In the case of the coconut, however, it must be noted that the incision is made just above where the nuts are borne. Splitting open the worms and baking them with boiled rice is mentioned by Duff as a favorite Indian dish (DF, 121).

225. The winged females of the *Atta* [*Oecodoma*] *cephalotes*, the kushi ant of the Creoles, when seeking new colonies, are much sought after, the abdomen being bitten off and eaten raw or cooked (SR, I, 240). When roasted or boiled they are considered a great delicacy by the Indians (ScE, 174). Gumilla speaks of the bodies of flying ants, in large quantity, being fried, the contained fat being sufficient with which to cook them (G, II, 268). The *Termes destructor* are likewise eaten (SR, II, 111, 112). On the Pomeroon the bodies of the female wood ants, which they call kakuli, are eaten by the Arawak. At Karakarang village, near the Cotinga, some of the Indians employed themselves during the day in catching numbers of the large species of termite, which build low mounds of earth, and, after roasting, ate them with evident relish. They captured these insects by inserting a dry grass stalk into their nests, to which the termites adhered by their mandibles and were drawn out in hundreds (BB, 127).

Von Humboldt makes mention both on the Rio Negro and the Casiquiare (which connects it with the Orinoco) of an ant paste used by the Indians. "Four natives were sitting round a fire of brush wood, and they were eating a sort of white paste with black spots, which much excited our curiosity. These black spots proved to be *vachacos*, large ants, the hinder parts of which resemble a lump of grease. They had been dried and blackened by smoke. We saw several bags of them suspended above the fire. . . . These *vachacos* furnish subsistence to the Indians of the Rio Negro and the Guainia [Waini]. They do not eat the ants as a luxury, but because, according to the expression of the missionaries, the fat of ants (the white part of the abdomen) is a very substantial food" (AVH, II, 389, 411). Certain ants are also considered a delicacy on the Uaupes River (Cou, II, 168).

226. The larvæ of certain honeybees constituted as great a delicacy as the honey with the Makusi and Wapishana of the upper Takutu. These were stinging bees driven from their nests by bundles of dried grass attached to long sticks, and set fire to (SR, II, 104). Crévaux speaks of the Indian eating bees' larvæ after removal of the "sting" with thumb and index finger (Cr, 223). Wasps' larvæ are also regarded as table delicacies and apparently eaten cooked or raw. The Indians make a fire under the nest and, after killing or driving away the old ones, they roast the young grubs in the comb and eat them (W, 217). The Wapishana on the Quitaro River were . . . busily engaged in picking out and eating the larvæ of a wasp, from the comb of a nest of that insect which they had knocked from the overhanging branches of a tree. The children especially seemed to enjoy the little white grub-like larvæ (BB, 156). I myself, when traveling with Makusi and Patamona, have had experience of the avidity with which they "rush" a tree to get the larvæ in certain species of wasp's nest. Wasps' larvæ are known to the Cayenne Carib as *ocomo* (Cr, 224). They are also eaten by the Trio (GO, 5) and Carib (AK, 188) of Surinam. On the Merewari River the Indians came to a halt to dig up the larva of some insect, which Schomburgk found them eating with their cassava bread. It appeared to belong to the order Hymenoptera and was enveloped in a lump of clay, hardened like a shell (ScF, 227).

227. Honey is easily extracted by enlarging the entrance to the hive, or knocking over the timber and splitting the limb. Plentiful as honey is (on the Orinoco) it would be still more so were it not for the little monkeys which, so Gumilla assures us, stationed at the entrance, gobble up the bees, one after another, as they go in or out. When the very last one has thus been got rid of the monkey, if he can get his hand in, will not leave a bit of honeycomb behind. If any is left he puts his tail in, and what sticks to this he licks off (G, I, 301).

CHAPTER XII

PLANT FOOD: ITS CULTIVATION, PRODUCTS, ETC.

Clearing of the land (228); not always necessary (229); occasionally, no agriculture in any form (230).

Ensilage (231).

Starch: From fruit grain (232); from mauritia palm (233); from cassava (234).

Cassava (235); bread (236); and leaves (237).

Substitutes for cassava (238-243).

Maize (244).

Rice (245).

Other economic plants (246).

Wild fruits (247).

228. The clearing of a field in the days before the introduction of metal was a work of no inconsiderable difficulty, and the following description furnished by Gumilla on the Orinoco will give some idea of the nature of the task undertaken: "With their axes made of a stone celt, with a cutting edge at each extremity (sec. 6), fixed midway in a suitable wooden handle, they would cut the green stems of the brambles and briers (*maleza*) after having broken them down with their macánas or hardwood clubs, the women subsequently burning the dry timbers. It took them two months to cut down a tree. . . . To start, throw up, and form furrows, after burning the undergrowth they employ shovels formed of very hard wood (which some call aváco, others macána, each nation giving it a name). . . . They manufacture these shovels with fire, burning some parts and leaving others free, not without skill, symmetry, and the expenditure of much time. . . . They heap up the earth on either side of the furrow and with it cover the straw and dried grass. They then sow their corn, cassava, and other roots . . ." (G, II, 229). That two months were required to cut down a tree is quite comprehensible. The Carib Islanders were obliged . . . to set fire to the base of the tree and then surround it above with moistened moss to prevent the fire ascending, and thus they undermined the tree little by little (RO, 508). As to the exact nature of the local primitive agricultural instruments, but little more than the above shovels is known, though one observer suggests the existence (on insufficient evidence, it seems to me) of their traces in a certain hoe-like dancing ornament met with at the present day on the upper Rio Negro (KG, I,

350). "The felling of the timber to clear a field is essentially man's work, and it often occurs that the owner will be assisted by his neighbors and friends, their labor being requited in the way of drink at the party given on completion of the work. Such an association, together with its subsequent festivities, is known as a kai-appa (Warrau), or mansirimanni, from the Arawak massaramanni. So also, on the lower Amazons, all the heavy work, such as felling and burning the timber, planting, and weeding, is done in the plantation of each family by a congregation of neighbors, which they call a 'pucherum'—a similar custom to the 'bee' in the backwoods settlements of North America. . . . When the invitation is issued the family prepares a great quantity of fermented drink" (HWB, 221). It must be borne in mind that in the clearing of the forest the Indian will usually save from destruction any economic palms or edible fruit trees. Dance says that kushi ants will not have their nests near a cunaparu (*Phyllanthus* sp.) plant, the milky juice of which is acrid and insufferably irritant, and it is for this reason that many fields contain two or three of these plants (Da, 213). The common practice of burning the savannas has nothing of an agricultural interest. The clearing of the field usually takes place at the commencement of the dry season. Hillhouse makes the following remarks concerning the labor entailed in the acquisition of a year's food supply by two people: "One Indian (Akawai) will clear and, with his wife, plant 2 or 3 acres in as many weeks, and 7 or 8 acres will supply them with a year's food, so that 10 or 12 weeks in the year is absolutely all that is required for actual labor, and the rest of the time remains for pleasure, hunting, and fishing" (HiC, 235). This excerpt is noteworthy in the mention therein made of the planting being done by a man—an unusual occurrence, the planting, like the weeding, being woman's work. So also, for similar reasons, the illustration of a man (sec. 343) grating cassava in Rochefort's work is very curious (RO, 105).

229. But local conditions, as on the banks of the larger streams, the Amazon and the Orinoco, may be such that there is no necessity for clearing any forest, suitable agricultural land being already available. Thus, some do not take the trouble to clear a piece of forest for this purpose [of a plantation], but make use of the sloping, bare, earthy banks of the Solimoens which remain uncovered by water during eight or nine months of the year, and consequently long enough to give time for the ripening of the crops of mandioca, beans, etc. (HWB, 282). The Otomac pursued the same tactics on the lakes when drying up with the fall of the Orinoco (G. I, 177; II, 231).

230. On the other hand, certain tribes, nomadic in their habits, never troubled about agriculture in any form. On the Orinoco the

Guajiva and Chiricoa did not cultivate their lands at all. They were always traveling from river to river collecting wild fruits; never built houses, and had no shelter from sun or rain (G, II, 227-228). Indeed, it is probable that their nomadicity saved them from extermination.

231. On the Amazons there is Acuña's authority for the statement that a kind of ensilage was practiced by the Indians. "They make great holes in the ground, wherein they put these [? manihot] roots, and, having well stopped them up with earth, leave them there as long as the floods (the annual inundations) last. . . . When the water runs off they open these pits and take out their roots without finding them at all the worse for lying in the earth" (AC, 57). The Indian also eats many roots, bush fruits, etc., which he sometimes plucks green and buries underground to ripen (PEN, I, 113).

232. Though the Otomac were essentially an agricultural people, . . . they did not, however, store their harvests, but just saved enough for the purposes of sowing. Among all the nations they alone knew how to make food and starch from the various fruits and roots which the others discard as being bitter, or but little wholesome. "The bread," says Gumilla, "is made as follows, its manufacture being woman's work: Each one has in the neighborhood of the river the necessary pits. In each pit there is fine chalk (*greda*) or picked clay, well kneaded and pounded by dint of constant water in which they keep it, after the manner of the clay which potters use in making fine earthenware. In the center of the said clay they bury the maize, fruits, or other grain, the substance of which they have to extract, and after a definite number of days the mixture arrives at maturity—i. e., the buried grain reaches the point of sourness (*agrio*). When it is time they take out the clay, already kneaded and well mixed up with the starch, and place it on earthen pans specially made for the purpose. Kneading it a second time with a large quantity of water they pass it through a strainer, manufactured with this object, and the very liquid mass falls into other clean pans. Here it rests, the earthy sediment with the starch of the grain or fruit sinking to the bottom, and leaving the water clear on top. This water they drain off. They then take a large quantity of turtle or alligator fat, stir it up, and mix it with the sediment, to form rounded loaves, which are then put in the ovens. If no fat is available they content themselves without it. The heat of the ovens dries up the moisture. If fat has been used the paste comes out of the oven soft; if not, as hard as a brick. Owing to the crunching of the earth during mastication it has been stated that the Guamo and Otomac feed themselves on earth" (G, I, 177).

233. The Warrau extract their starch from the mauritia palm as follows: When an ite tree begins to fructify it is cut down, a large

slice is cut off one side, and the stringy substance of the interior is cut into shreds, the remainder of the trunk serving as a trough, in which it is triturated with water, by which is disengaged a considerable quantity of starch. The fibrous particles are then extracted, and the sediment, or aru, formed into molds like bricks. This is spread out on stones or iron plates over the fire, and makes a very nutritive but at the same time unmasticable bread (HiB, 327). Gumilla gives the name of yuruma to the mauritia starch (G, I, 150). The present day Moruca River Warrau and Arawak call both cassava and its starch aru or haru.

234. The Pomeroon Arawak make theirs from the bitter variety of cassava, but they can manufacture it from the sweet. The former is treated as follows: After being scraped and grated it is squeezed with the hands and the fluid collected in a calabash, where there gradually forms a sediment, which is subsequently poured off. This sediment (the starch) is washed and strained through a very fine sifter and dried in the sun. Mixed with kereli (sec. 257), it can be baked into round cakes and eaten. Tapioca is made from the starch removed before the mass goes into the matapi or squeezer. A common dish when meat is scarce is made of cassarip mixed with starch and boiled for a considerable time with peppers to taste; any cut-up green stuff, such as calaloo, etc., can be added. Indeed, with any scarcity of food the Indians will mix or thicken whatever they may happen to have—e. g., a handful of small fish—with peppers and starch (Mak., Pat., Are.).

235. Cassava, cassada, cazabe, etc., is the "bread" made from that most useful of edible plants known as yuca, yucca, magnioca, mandioca, manioca, manihot, etc. Digging, loosening, and heaping up a small mound of earth, the Indian female will place in it two slips of cassava stem from 18 to 20 inches in length. Being inserted on the slope, one extremity of each stick is left exposed, the other being covered up with the earth just removed. On the islands the women are said to have used long pointed sticks for the digging (PBR, 241). Arawak have told me that two slips are invariably used in case one of them should fail to strike. The crop will ripen in about nine months, but whether the same field can be replanted will depend upon the kushi ants and the nature of the soil. It is true that cassava can be propagated from seed, but this procedure is not practiced. There are two kinds of cassava—the yuca dulce and yuca brava of the old Spaniards (G, II, 242)—corresponding with those now known to the Creoles as sweet and bitter (poisonous) varieties, to the Arawak as búsulí and kallí, and to scientists as *Manihot utilisima* Pohl. (*Jatropha manihot* Linn.) and *M. aypim* Pohl., re-

spectively. Though both can be made into bread, it is usually only the bitter that is thus utilized. The method is as follows:

236. After the cassava root has been peeled [with the teeth, up to the middle of last century, among the Uaupes River Indians (ARW, 336)] and grated, it is placed in a squeezer (matapi, sec. 345), whereby its poisonous juice is expressed and the contained residuum (yuraha) removed and dried. On the Uaupes, however, instead of using the squeezer, the juice may be forced by hand pressure through a circular sifter (pl. 51 B) supported on a triangular frame and collected in a receptacle below (KG, II, 206). The old-time Surinam Arawak used to put it into a plaited press with a board on top, on which the woman would sit, her weight exerting the necessary pressure (BER, 70). The extracted juice, after boiling, is known as cassarip (sec. 248). The residuum when dried is pounded up in a mortar, passed through a sifter, and placed on a circular clay grid, now substituted by iron, where over a smart fire it is made either into thin cakes (Arawak, kalli) or into "farinha." The difference is in the baking, for, instead of being allowed to consolidate into an entire cake, the cassava meal is kept constantly stirred as it rests on the iron griddle, so that in drying it assumes the form of an accumulation of small dry crumbs of wheaten bread (IT, 262). The cassava cake, the form in which it was eaten in the islands, is identical with the beiju of the central Brazils (WJ, 86). The preparation of farinha does not seem to be carried on much beyond the valley of the Amazon and its tributaries, where it is spoken of as couac (WJ, 86) or coaque (PBA, 56).

237. Bitter cassava leaves make an excellent vegetable, and are prepared chiefly by Akawai, sometimes by Makusi, as follows: The leaves are denuded of their stalks, finely minced on a grater, and boiled, the water being changed from time to time until all bitter taste has gone. Game or any other meat available may then be added. Schomburgk was the first to note that the Arekuna eat the cooked terminal sprouts of the cassava (SR, II, 234).

238. When the supply of cassava for food has run short or become damaged through drought, excessive rain, or, as often as not, the Indians' own neglect, its bulk is said to be increased by mixing in it chopped cassava leaves after being well dried. More often, however, other seeds are mixed with or substituted for it, the principal of which are the following:

239. Mora seed (*Dimorphandra mora* Bth.): The skin is scraped off, and the seed then soaked in water for a week, when it is grated—though very hard to grate—and squeezed in its straw—i. e., the remains of the leaf after its cortical fiber has been removed for

string making. The grated seed is squeezed by wrapping it in this straw and then twisting the ends of the latter in opposite directions after the manner of a towel in the making of a hot fomentation. It is now mixed with a little cassava and baked, when it forms a cake of the color of coconut husk. It still tastes bitter, but is good, in that "it kills nobody." The reason why it is squeezed in the straw and not in a matapi is that usually a sufficiently large quantity is not made. The object of mixing it with a little cassava is that it would otherwise prove too dry for the palate.

240. Greenheart seeds (*Nectandra rodiaei* Hooker): The seeds are grated and put in fresh water, and a matter precipitates similar in appearance to starch. It is repeatedly washed to lessen its bitterness, which it never loses entirely. It is then mixed with rotten wood, pounded previously and sifted, and those who have it in their power mix a little cassava flour with it. This substitute for bread is not only quite black, but as bitter as wormwood, and can not be wholesome (ScA, 346). If cassava is scarce, the Warrau of the Barima mix the meal with greenheart seeds and the pith of the ite palm (SR, i, 196).

241. The seed of the dakamballi (*Vouacapoua americana*) is used by the Indians, in time of scarcity, for bread, it being grated and mixed with the flour of the cassava root . . . It is by no means disagreeable when baked (BE, 14; CC, 55).

242. Pario seeds: These are peeled, grated (but not soaked), mixed with a little cassava, squeezed either in ite straw or a matapi, and baked into cakes. It is not so bitter as mora, and if not mixed with a little cassava it is too dry.

243. Nuts of the sawari tree [*Caryocar (Pekea) tuberculosa*] with mora and greenheart seed, grated and mixed with rotten wood, served instead of cassava bread in season of scarcity, on the Demerara (Da, 177).

244. Maize.—While the ordinary maize (*Zea mays*) was cultivated throughout the Guianas, Gumilla draws attention to an alleged special variety met with on the Orinoco: "All the Otomac Indians who live near the lakes, of which there are many, and very large ones, as soon as the waters fall, plant up the soil now left exposed. . . . In the neighborhood of these lakes the said Otomac, Guamo, Pao, and Saruro sow a peculiar kind of maize, which has not spread, nor have I seen it amongst other nations. In their own language they call it onóná or 'two-month maize' (*mais de los dos meses*), because in two months from sowing it grows, throws out ears of corn, and ripens, with the result that in the circle of the year they collect six harvests of it. In between they plant sweet canes, plenty of calabashes, and a large quantity of watermelons" (G, II, 231).

Schomburgk reports seeing bread manufactured from a mixture of manihot and maize meal (SR, II, 188), and some pap made of pounded maize boiled with cut-up pumpkin (SR, II, 192) among the Makusi of the upper Cotinga. Dance speaks of aknaikh, a mixture of maize and buck-yam, met with on the Curiebrong. The corn, with pieces of boiled purple buck-yam interspersed, is thrown into a wooden mortar, and cold water added when the pestle is worked—not pounded downward—from all sides to all sides (Da, 232). Wild maize, whence the settlement receives its name, was found at Annai village, on the eastern foot of the Pacaraima Range (ScO, 73).

245. Rice.—Though rice was introduced from the East Indies, it was growing wild on the Orinoco, certainly a couple of centuries ago. "It is a very singular and noteworthy thing that I have observed," says Gumilla, "on the lands subject to inundation on the Rivers Orinoco, Meta, Apure, Casanare, Tame, and others, and that is, in place of the reeds which are generally seen in other lakes, in those of the said rivers, is to be found rice growing, increasing, and ripening. It arises in the moist soil without anyone sowing or cultivating it. The inexperienced Indians do not recognize the use of this precious grain, but the little birds do" (G, II, 231). Brown speaks of the Wapishana bringing him some fresh provisions, among which was a small quantity of unshelled rice which they had grown themselves (BB, 274).

246. The following is a list of the more common economic plants other than cassava which are recorded as having been cultivated by the Indians:

Ananas sativa. Pineapple (G, II, 246).

Anacardium sp. Cashew (ScB, 178).

Arum sp. (PEN, III).

Bactris gasipäes=Guilielma speciosa. Paripi or peach-palm (SR, II, 417; HWB, 286).

Bixa orellana. Ruku.

Bromelia sp. (karatas). Silk-grass (kuraua).

Capsicum sp. Peppers.

Carica papaya. Papaw (G, II, 246).

?Cinnamomum (G, I, 321).

Cocos nucifera. Coconut.

Crescentia cujete. Calabash (PEN, I, 111).

Ipomœa batatas. Potato (FE, 75).

Citrus sp. Lemon (ScB, 178; ScO, 123).

Citrus sp. Lime (ScG, 264; ScB, 178, 187).

Citrus sp. Orange (ScB, 187).

Dioscorea sp. Yam (ScB, 187).

Euphorbia cotinoides (PEN, I, 111).

Genipa americana. Lana (ScT, 25, 39, 40; SR, II, 47, 371).

Gynerium saccharoides. Arrow-reed (Pnk, I, 525).

Gossipium spp. Cotton (ScT, 25).

Lonchocarpus spp. Haiari fish poison (BA, 106).

Musa sp. Banana (ScG, 250).

Musa sp. Plantain (G, II, 246; BA, 29).

Nicotiana tabacum. Tobacco.

Persea gratissima. Avocado pear.

Saccharum officinarum. Sugar cane.

Solanum sp. Yams.

Tephrosia toxicaria. Fish poison (PEN, I, 111).

Theobroma cacao. Cacao (ScG, 264, 269; ScO, 123).

Zea. Maize (PEN, I, 111).

In Timehri for June, 1888, J. Rodway gives lists of plants cultivated and introduced into the Guianas.

247. But, besides these, there are a large series of wild fruits, berries, nuts, etc., that are eaten by the Indians. Unfortunately, in the absence of any official or other authoritative flora, very few of them are identified:

Achras sapota. Sapodilla.

Anona muricata. Sour-sop. Probably cultivated American.

Anona reticulata. Custard apple. Probably cultivated American.

Astrocaryum tucumoides. Awarra.

Astrocaryum tucuma. Akko-yuro.

Bertholletia excelsa (?nobilis). Brazil nut.

Caria seeds (ScA, 327).

Caryocar (Pekea) *tuberculosa*. Sawari nut (ScO, 49).

Cereus sp. (ScT, 53).

Eugenia sp. The casimi of the Makusi (ScT, 20; SR, II, 11).

Genipa mariana and *G. edulis* (SR, II, 47).

Hymenæa courbaril (BA, 66).

Inga laterifolia. Shirada.

Manicaria saccifera. Truli.

Maximiliana regia. Kokerit.

Mauritia flexuosa. Ite.

Malpighia (SR, II, 17).

Mammea americana. Mamee apple.

Melicocca bijuga. The maku of the Makusi (SR, II, 47; ScT, 39-40), the kinip and marmolada-box of the Creoles.

Mimوسops balata. Bullet tree.

Mushrooms (G, I, 263).

Nigritia schomburgkii. Small guava (IT, 267).

Oenocarpus sp. Turu.

Palms.—The fruit is edible of the following palms mentioned by Gumilla, but I do not think they are scientifically recognizable: Jijirri (G, II, 247); camuirro and vesirri (G, II, 249); mararabes,

the black fruit from a palm so short that they can reach it with their hands (G, I, 263); and cubarros, the fruit from a larger palm full of prickles (G, I, 263). The cabbage (i. e., the young growing shoot) can be eaten from most of the palms, except from the paripi (Gulielma), but the trees are destroyed thereby.

Paullinia.

Psidium sp. Guava. *P. turbiniflorum* is the piriko of the Makusi (SR, II, 12). *P. guajava* (SR, II, 12).

Spondias lutea. The maropi of the Makusi (SR, II, 129, 362; ScT, 63), the hog plum of the Creoles.

CHAPTER XIII

FOOD ADJUNCTS

Sauces: Cassarip (tukupi) (248); arubé (249).

Salt: From plants (250); from inorganic sources (251); varying use by Indians (252).

Earth eating (253).

248. With regard to sauces, that obtained from the cassava and known as cassarip, the quisáre of Gumilla (G, II, 242), has the widest distribution. After the poisonous juice from the cassava has been expressed by means of the matapi, time is allowed for its contained sediment (starch) to settle. This expressed juice, together with its starch, is known as keheli to the Arawak. The water is then carefully poured off and, with peppers, boiled for about three hours or so, by which time it will have become thickened as cassarip. A little salt may nowadays be sometimes added to the peppers in the boiling. The tukupi sauce of the lower Amazons (HWB, 163), of the Rio Negro (KG, I, 332), etc., is apparently identical with cassarip, save that it is seasoned with small fishes in addition to the peppers. Bates says this "is generally made as a liquid, but the Juri and Miranha tribes on the Japura make it up in the form of a black paste by a mode of preparation I could not learn. . . . I have seen the Indians on the Tapajos, where fish are scarce, season tukupi with leaf-carrying ants (*Ecodoma cephalotes*). It is there used chiefly as a sauce to tacacá, another preparation from mandioca (cassava), consisting of the starch beaten up in boiling water."

249. Arubé is another sauce on the lower Amazon made of the poisonous juice of the cassava boiled down before the starch is precipitated and seasoned with peppers (HWB, 163). Earthworms may be boiled with fish to give the latter an extra relish (ARW, 201). Not at ordinary meals but on occasions of rejoicing and debauchery the Carib islanders would use a seasoning made from Arawak fat (RO, 500).

250. Though salt is a comparatively rare article with the Indian, he is not ignorant of the methods of procuring it otherwise than by exchange and barter, from products of both organic and inorganic nature. In the former case it is usually obtained from certain palms. In Cayenne the particular kind is known as "pinot" (or pineau) to the coastal inhabitants, and the Roucouyenne of the Yary River procure it as follows: After burning, the ashes are placed in a large

earthen saucepan of hot water, where they sink to the bottom, their contained salts being dissolved. In evaporating the solution, freed from the ashes, there becomes desposited a white crystalline matter composed of different salts of soda and potassium, a substance which replaces salt without any inconvenience (Cr, 118). Father Acuña, when speaking of the Indians on the Amazon, says that they have no great quantity of salt, and that which they use to season their meat is very rare with them, and is made only of the ashes of a sort of palm tree, so that it is more like saltpeter than common salt (AC, 62). In Surinam palm-tree ashes were also employed (St, 11, 115). In the Catalogue of British Guiana Contributions to the London International Exhibition of 1862, page 62, it is stated that the Accawai Indians obtain a substitute for salt from the ash of the mid rib of the kokerit palm. Wallace, however, on the upper Rio Negro, speaks of the Indians obtaining it from the fruit of this same palm, as also from the fruit of the *Leopoldina major* (ARW, 340). Schomburgk says that the Indians prepare a kind of salt from the ashes of the burned leaves of the *Mauritia flexuosa* (ScT, 25). In Cayenne the Indians also obtained their requirements by washing the cinders of the maripa (kokerit), pineau (? truli), and other palms, and then filtering through a cone-shaped basket (PBA, 162). At Yavita, on the Atabapo, upper Orinoco, a salt is fabricated by the incineration of the spadix and fruit of the palm tree seje or chimu (AVH, 11, 365). Among plants other than palms there is the poluyo, a species of *Salicornia* (?) from which the Guapés and other Indian tribes along the Rio Negro prepare this article (ScO, 341). Another source, the *Polypodium*, is mentioned from the Orinoco: "In the trunks of the palms grows the polypodium. Its stem is thin and hairy, whence the Betoyes call it monkey-arm. Its leaf is like that of cabbage; it goes on increasing and sends out roots on one and the other side of the palm, whence it draws its sap, and keeps itself from falling. . . . The Indians light a fire, and when the wood is burned place these roots on the glowing ashes; the charcoal which results is saltpeter sufficiently strong for them to put into the earthen pot to give it the taste of salt" (G, 1, 273). The remaining plant recorded as a salt producer is the weya, weira, weyra, or huya, the *Mourera fluviatilis* Aubl., an aquatic plant which is found growing on the rocks in many of the rapids in our own colony and on which the pacu feeds. The salt obtained by boiling is, when crystallized, of a dirty brown color and of a very inferior quality (BE, 42; ARW, 340; SR, 11, 497). This mourera may be identical with the plants from which caruru salt is obtained (Cou, 11, 169).

251. According to Bancroft, the Indians used but little salt with their food, and until the Europeans visited them they had none, except what they sometimes procured by boiling sea water in their

small clay pots, but the far inland inhabitants scarcely ever saw any in their lives (BA, 325). This author was evidently unaware in those days of the existence of large areas of natural salt incrustations on the savannas, from which the Indians manufactured an impure salt (BB, 318), that constituted a very important article of trade and barter. Thus Schomburgk speaks not only of Makusi (ScF, 212), but also of Wapishana (ScF, 213) journeying to the savanna to collect salt: of the article on the Takutu, he says that, looking like peat earth when collected, it takes on a white color with repeated washing (SR, II, 47). Salt is found in patches in minute crystalline particles after the evaporation of the water left by the heavy rains. Thus, on the surface of the river loam within 200 yards of the Chewow River, a branch of the Pirara, and at a distance of 5 miles from the Ireng River, there is one of those places where salt is obtained from the surface of the ground by the Indians . . . Near the head of the river there is another salt patch, also one near the Ireng not far off, and a third on the Pirara River to the northeast. The guide explained that after every rainy season, when the country becomes dry and parched, the salt comes out on the surface, and is then very pure and white and in greater quantity than at any other time. When removed by the Indians it continues to form, and the portion taken away is soon replaced (BRS, 177). The Indians gather it, mix it with water, and place it in a large funnel-shaped gourd, having a plug of grass in the bottom, through which the water, after taking up the salt in solution, slowly filters. The water is then boiled down and a dark, fine-grained salt obtained (BRS, 165). ["A little to the westward of the Orinoco the abundance of salt contained in the peninsula of Araya was known to Alonzo Niño . . . in 1499. Though of all the people on the globe the natives of South America consume the least salt, because they scarcely eat anything but vegetables, it nevertheless appears that at an early period the Guayquerias dug into the clayey and muriatiferous soil of Punta Arenas. Even the brine pits, now called new (*la salina nueva*), situated at the extremity of Cape Araya, were worked in very remote times" (AVH, I, 179).]

252. The taste for salt among the Indians would seem to be far from general. It was said of the Island Carib that, though plentifully supplied with salines, "they would not ordinarily taste it, regarding salt as quite contrary to health and the preservation of life. . . . instead of salt, they peppered everything (RO, 365). Salt is not so much sought after by the Uaupes River Indians as by many other tribes. . . . Peppers seem to serve them in place of it (ARW, 340). On the other hand, Im Thurn is responsible for the extraordinary statement that salt is largely eaten by itself, just as an English child eats sugar (IT, 265); while Bernau even goes so far as to assure us that he has seen the Essequibo Indians eating it by

handfuls (BE, 231). The latter gentleman is of opinion that the want of salt of a wholesome quality and in sufficient quantity is another reason why the Indian sinks so rapidly when attacked by disease.

253. Earth eating appears to have been a more or less common practice throughout the Guianas, and most travelers have drawn attention to it. Thus: "The Guama and Otomac, their neighbors, are earth eaters (G, 1, 166). Even while bathing the Otomac will eat of the chalk from the banks (barrancas). . . . To keep their children quiet mothers will give them earth to lick and suck. If kneaded with a certain sauce . . . they like it better (G, 1, 172). The bread, made with alligator fat, of the Otomac is at least half of it chalky earth, which naturally ought to injure those who eat it; but the very opposite is the case, because these Indians excel the other nations in health, strength, and size. This moved me to inquire," says Gumilla, "how it came to pass that other nations when out of pure cussedness (*por vicio*), they eat earth, as happens with young children and pregnant women, they soon lose color, become languid, and sicken, . . . I have found that alligator fat entirely cleanses the stomach without allowing any earth to remain in it; an ounce of the fat, with a little sugar to avoid nausea, taken fasting, three or four mornings running" (G, 11, 224). Humboldt, however, qualifies Gumilla's statements as follows: "The Otomac do not eat every kind of clay indifferently; they choose the alluvial beds or strata, which contain the most unctuous earth and the smoothest to the touch . . . the natives neither cause the earth to rot, nor do they mingle it with flour of maize, oil of turtle's egg, or fat of the crocodile" (AVH, 11, 495). But elsewhere this author would hardly seem to regard earth as an ordinary article of everyday diet, but rather to assuage the cravings of hunger in seasons of scarcity (AVH, 11, 196). Crévaux says that all the Cayenne Carib are earth eaters. In each house, upon the boucan where the meat is smoked, one will find some clay balls, which the Indians smoke dry and eat pulverized. Always an hour after each meal they will take one of these balls, remove the outer layer that has been blackened, scrape the inside with a knife and thus obtain a fine powder, of which they swallow 5 or 6 grams in two doses (Cr, 287). Very many children on the upper parts of the Amazons have this strange habit of eating earth, baked clay, pitch wax, and other similar substances; not only Indians, but Negroes and whites. It is not, therefore, peculiar to the famous Otomac of the Orinoco described by Humboldt (HWB, 275). De Goeje in Surinam speaks of seeing a Trio woman eat earth (GO, 5) Judging from another traveler's account, edible clay must be regarded as quite a delicacy (KG, 11, 291).

CHAPTER XIV

DRINKS

Water in times of scarcity (254) ; honey (255).

Fermented drinks: Chicha, "beer," etc. (256) ; paiwarri (257) ; cassiri (258) ; beltiri (259) ; ovaku or ouïcou (260) ; couria, berria, palino (261) ; kumani, parakari, sakura (262) ; maby (263) ; maize drink (264) ; caapim (265) ; pineapple drink (266) ; wild cashew, cane juice, cupana or guarana (267) ; plantain, couscou, yahé (268).

Nonfermented drinks: Ite (269) ; turu, manicol (270) ; awarra, paripi, arakodak, hitchia, etc. (271).

254. In times of scarcity water may be obtained from the sap of various creepers, etc., from the sheath bases of the leaves of certain plants, and from the soil in close proximity to one or two kinds of palm, etc. B. Brown, at Camuti Mountain, Essequibo River, thus speaks of procuring water from a vine called the waterwithe, a species of vitis (?*Entada polystachya*): "My men sought for and found a number of these vines, which had wound themselves round the stems of large trees. Cutting them off as high as they could reach they severed them quickly lower down, obtaining portions of stem some 5 feet in length and from 3 to 6 inches in diameter. Holding these vertically, the sap, which appeared to be nothing but pure, clear, cool water, ran quickly out and was caught in a cup and drunk. From one length of the largest size we obtained at least a pint of water" (BB, 323). Gumilla had previously recorded this method of obtaining water from cut vines on the Orinoco (G, II, 266) ; and Barrère had done the same in Cayenne (PBA, 178). In the latter area of the Guianas, when the Indians traverse the mountains, they drink the sap of *Lonchocarpus rufescens*, the salisali of the Roucouyenne (Carib), who use the creeper for poisoning fish. Though this water is fresher than that of a clear stream, one must only drink of its first flow, because that which subsequently comes away is a white, milky juice, possessing toxic properties (Cr, 278). In periods of drought the old-time Arawak of the Pomeroon would obtain water from the young truli fruits after breaking. There is nothing strange about the taste of this water, with which I have more than once refreshed myself. The wild pine (*Tillandsia* spp.) provides the thirsty traveler with miniature water tanks in the sheath bases of its leaves (BW, 236). So also Schomburgk, when on Mount Warima, expresses himself: "Several others of the families related to that genus cover the rocks

with their foliage; each like a natural cistern yielded us upwards of a pint of water; that which was on the top clear and pure; the remainder filled with residue and a slimy matter peculiar to the plant. The water is, however, well tasted, and our Indians drank copiously of it" (ScF, 232). Since the ite palms grow only in moist soil or swamps, the same traveler relates how, when he failed to procure water by digging at the foot of their trunks, he knew that his search would prove hopeless anywhere else in the neighborhood (ScT, 25). The same thing is stated of the sandkoker or oronoque tree (*Erythrina glauca*), at the roots of which water can be collected in the dry season. The Wapishana of the Takutu dug holes on the edges of certain swamps to collect it (SR, II, 48, 106). On the Annai savanna, in the Rupununi, I observed several such ground pits specially dug for collecting and storing water in the dry season, in the close neighborhood of the Makusi settlement; the deepest was barely a couple of feet. Schomburgk also mentions such pits on the edges of the swamps (SR, II, 78). Manicol palms (*Euterpe edulis*) are also said to be a sure sign of the vicinity of water. Dance is responsible for the statement that in the tropics the Indian finds his way to the rivers by barking a tree, well knowing that in a line with the thickest part is the path to the river (Da, 252).

255. Wild honey may be mixed with water and drunk, but there is no record of its ever being left to ferment. "Even in its natural state this honey differs from that of European bees in that it is not viscid, but almost as fluid as water, and has a subacid, highly fragrant taste" (IT, 268).

256. The Guiana Indians are well versed in the manufacture of fermented liquors. Gumilla speaks of their obtaining chicha "from whatever seeds they sow, roots they cultivate, or fruits they collect" (G, II, 243). Cassava, without doubt, furnishes them with the largest number of alcoholic liquors—paiwarri, cassiri, beltiri, ovicou, berria, kumani, etc.

257. Paiwarri, the paiwa of the Akawai, the bai-yauro of the Warrau, the irito-atahu (lit., black drink) of the Arawak, the tapana of the Surinam Carib, etc., is manufactured as follows: A cassava cake, made about 1½ inches thick, is burned on the usual flat circular iron plate, where it is turned over and over until such time as it becomes black through and through, and is called basha. In the meantime the cassava juice that has already been squeezed through the meshes of the matapi is poured into a pot and boiled until all the bitterness has been extracted, but not waiting for the stuff to reach too thick a consistence, when water is added to it. The burned cassava, after being broken up, is next thrown into the pot, which is now taken off the fire, its contents turned out into a wooden trough,

and boiling water poured over the mixture. To this is now added a calabashful of kereli (the Arawak name), which, the Indians explain, prevents the drink becoming slimy and useless. Next day it is strained in the conical-shaped basket, the kamaiyo (sec. 424)—a practically obsolete article, which is nowadays replaced by the ordinary cassava squeezer employed as strainer. Twenty-four hours later the drink is ready for the palate, and, if not then used, becomes gradually sour, until at the end of, say, three days, it is no good whatever, unless and except fresh burned cassava is added and the remaining process of manufacture repeated. The kereli above referred to is the chewed fresh cassava bread, previously soaked in sugar-cane juice, which has been thoroughly saturated with saliva and spat out again by the different women and children, sometimes men assisting (ScG, 258). In certain areas this chewing process is said to be essentially woman's work. At Taiepong village, on the upper Potaro, the Indians apparently supplemented the ingredients of their paiwarri by mixing with the burned cassava cake the ashes of the huya (*Mourera fluvialis*) (BB, 201). It is interesting to note that in the early days of the eighteenth century oversea passengers landing at Berbice, after undergoing the necessary legal formalities, were subsequently regaled in the governor's house with a pipe and a bowl of paiwarri (Ti, II, '83, p. 334).

258. Cassiri, cachiri, etc., is so called from the red "potato" or "yam," the cashiri of the Arawak, which gives the drink its distinctive color, this being always of a pinkish red. After being peeled and grated the cassava is squeezed dry between the hands, any balance of the wet stuff left being squeezed in the matapi and used up for ordinary "house bread." The dried portion is put with water into a pot, where it is boiled and stirred until all the bitterness is gone, by which time it has become fairly thick, the bitterness being gauged by the taste. It is now taken off the fire and mixed in the wooden trough with some of the red liquid previously obtained by boiling the red potatoes in water. (Another method is to boil the scrapings of the potato with, and in the same pot as, the hand-squeezed cassava, and then to place the mixture in the trough.) Kereli is next added, and the whole strained during the course of the following morning, when it is put into jugs (uncorked) and is fit for drinking three days later. Among the Warrau on the Barima, Schomburgk speaks of cassiri drink manufactured from maize, potatoes, and cane juice (SR, I, 201; II, 212).

259. Beltiri is a name derived from the Arawak word beletto, signifying anything soft or jelly-like. Whereas paiwarri and cassiri are used chiefly for purposes of feasting and sport, beltiri is essentially a drink for home consumption. I would instruct anyone in its

manufacture as follows: Prepare your kereli, and place it with warm (not boiling) water in a calabash. Having, in the course of making household cassava cake, expressed the fluid from the squeezed cassava by means of the matapi, pour this into a pot and boil until all bitterness has disappeared, by which time it will have become fairly thick. As soon as it gets cold add a little of the red liquor, previously obtained by boiling red "potato," together with kereli, in sufficient proportion to form a soft mush. This will keep good for certainly a week. A portion, as may be required, is put into a cup of water, when it will more or less melt, and can then be drunk straight-away. I am very suspicious that the sakula or sakura (sec. 262) is more or less identical with beltiri (PEN, I, 114).

260. Ovaku, ouïcou, etc., had an established reputation in its day, and was known equally well in Cayenne as it was out on the islands. I am indebted to Fathers Grillet and Bechamel, who were traveling in French Guiana during the latter part of the seventeenth century, for the following description both of its nature and manufacture: "What is ordinarily used is as white as milk and of the same consistence. It is very refreshing and nourishing, and is composed of cassava baked after their ordinary manner, and potatoes boiled with it till they are of the consistence of paste. This they put into baskets lined with the leaves of bonano (? banana) trees, in which it keeps good for a month, and then begins to grow sour, but not quite so soon if it be kept in a cool place. When they use it, they steep as much as they have present occasion for in a sufficient quantity of water, and if they are at leisure they strain it. But they often only steep it and drink it without straining, and if sugar or sugar-canes bruised be mixed with it it comes very near the taste, color, and consistence of orgeate, the use of which the French have taken from the Italians some years since. This drink is called ovaku upon the Continent and oviku in the islands. It is believed that the reason why the Europeans can never attain to make it so good as the Indians do is because these chew the potatoes and cassava before they boil them together, and understand better what degree of boiling they require to give this liquor its greatest perfection. But seeing its preparation in this way turns one's stomach more than the reading of it; and the wine that washes the dirty feet of the grape gatherers as they tread the grapes is no less nauseous, but the fermentation both of the one and the other correct all this uncleanness" (GB, 51). The Carib Islanders apparently had two sorts of ouïcou made with and without potatoes, respectively. In the latter case it was manufactured as follows: After taking the cassava off the grid, they put it somewhere in the house and cover it with manioc leaves and some heavy stones to "heat" it, which it

does in three or four days. They next cut it into several pieces, which they lay on banana leaves, sprinkle lightly over with water, and let them remain uncovered. After one night this becomes quite red, when it is ready to make ouïcou with. It is next boiled without potatoes (RO, 501). Ovicou was also the name given to certain drinking feasts by these Antilleans (RO, 515).

261. Couria is a drink mentioned by Crévaux as met with on the Guaviar River, and made from sweet potatoes and cassava, diluted and fermented (Cr, 508). Unfortunately no further particulars of its manufacture are forthcoming. Berria is another cassava product noted by Gumilla. On the Orinoco and in other parts, especially on the Ayrico, the Indians heap up hot cassava cakes, cover them with plantain leaves, and after fermenting through the action of the heat they dissolve them in warm water, and placing the resulting broth in earthen jars (*tinajas*), it effervesces like must, and produces a beer which is called berria, because it comes from the berri—i. e., the cassava (G, II, 243). I am informed that the present day Demerara River Indians manufacture a cassava drink on practically identical lines—i. e., without the use of any kereli. Palino appears to have been a Cayenne drink identical with the berria (GB, 51). It seems to me that this is the drink referred to by van Berkel under the name of bassia, as it was called by the Dutch, and as pernou, pernouw, perrinoe, etc., by the Indians (BER, 25).

262. Kumani, of the Demerara River, Surinam, etc., is a composition of cassava bread, cassava sticks or twigs, and soft wood, all burned and pounded together, and placed in jars with water for weeks to ferment. Portions of the fermented matter are then wrapped in leaves. It is sweet and honey-like, and when mixed with water, used as a beverage (Da, 214). But, according to the Makusi, kumani is made thus: After removal from the matapi the cassava is broken up, sifted, mixed with charcoal ashes, and baked into cakes. These cakes are cut into long strips and tied up in bundles with "bushes," leafy twigs, for about six weeks, when they are soaked in water for 24 hours, and the mixture, intoxicating, is ready to be drunk. Parakari is prepared in a similar manner with similar effects, but has no charcoal mixed with it. I have seen it used by Makusi.

Sakura (sec. 259), invariably taken on a sea journey by the Surinam Carib, was a kind of pap, made of chewed cassava, cooked yams, and such like. A handful of it mixed with a calabashful of water formed a sort of soup (AK, 181). This was perhaps akin to the procedure mentioned by Schomburgk, who thus describes how the Makusi were wont to insure a supply of cassava drink when traveling; "A few days before starting on a journey the housewife bakes some fresh cassava bread, of which one is chewed, while the others

are kneaded into a paste, together with the chewed mass and the thickened juice of the manihot . . . Fermentation commences after four or five days. If the Indian wants to quench his lively thirst he just takes a small quantity of the stuff, puts it into a drinking cup, pours water on it, and stirs the contents until they are dissolved" (SR, II, 4).

263. Maby was manufactured by the Carib Islanders from potatoes boiled with water (RO, 501), apparently without any admixture of cassava, but unfortunately no further description has been handed down to us. The following is a Demerara River Akawai receipt for making the so-called mabi or red-potato drink of the Creoles: Commence operations in the afternoon. Take red potatoes, scrape off the outer skins lightly, and boil the whole until soft. Then mash up fine in a mortar, and throw into a jar or tub with boiling or cold water. Leave all night. In the morning strain through a fine sieve and add sugar, place in a close, corked vessel, jar, or bottle for two or three days; in about two days it begins to work.

264. Maize drink runs the various products of cassava very closely in the way of a favorite alcoholic liquor, and its methods of production afford interesting illustration of the different ways by which fermentation may be secured. Starting with the Orinoco, Gumilla tells us how, from maize, ground with the vigor of a woman's arms, the Indians make their loaves, which, inclosed in leaves, they cook not in an oven but in boiling water, having some very large earthen vessels (*ollas*) for the purpose. They call this bread cayzú. They usually crumble it when it is fresh and knead it up a second time in a large quantity of hot water. Having crushed to powder four of these old loaves full of mold, which they call subibizú, they mix the said powder into that liquid dough, which, placed in large earthen jars (*tinajas*), effervesces on the third day, there resulting a chicha or healthy beer if taken in moderation (G, II, 242). The same method of preparation was apparently practiced in Surinam, for Stedman speaks of a beverage (*chiacoar*) composed from the maize or Indian corn, which is first ground and baked into bread, after which it is crumbled and macerated with water till it ferments (St, I, 392). Crévaux's description differs from the above in the addition of sugar. With banana leaves the Indians make up parcels containing 2 to 3 kilograms of maize meal. They boil these for 10 hours in a saucepan containing water and then hang them up in their huts or leave them out in the air for from 15 to 20 days. These become covered with a mold, which is yellow on the elevated plains but green on the warm lands. It is now time for them to take the parcels down and dissolve their contents in water containing a small quantity of panela (i. e., nonrefined sugar made up into cakes of the

shape of a brick). This is then strained through a rough sifter and the fluid collected in a wooden vessel, where it undergoes alcoholic fermentation, and, according as the temperature is cold or hot, from 4 days to 24 hours is required for this (Cr, 405-406). In British Guiana, certainly on the Pomeroon, the maize, after being pounded if dry, or grated if fresh, is thrown into warm water and boiled, after which it may be drunk straightaway, but if "strong" drink is wanted chewed kereli is then added and the liquor strained next day. Within three days it is ready for consumption.

265. Caapim, met with in the Uaupes River district, is an intoxicating liquor made with a grass, which is perhaps a species of hemp. It is very bitter (Cou, II, 167).

266. Pineapple juice, an intoxicating liquor, is prepared by peeling the fruit and grating it on a sieve, allowing the juice to take its own time to ferment. The Arawak have no special word for it, just calling it nanna-ura (lit., pine juice).

267. The wild cashew (*Anacardium*) similarly yields a very pleasant alcoholic drink. Arawak call it obudi-ura (lit., cashew juice).

Cane juice likewise requires no special preparation. While the sugar cane is being squeezed in the "mill" (sec. 383) the juice trickles down the artificial gutter, whence it is collected. It takes about three weeks to fully ferment, and is highly intoxicating. The doubtfully Indian name, on the Pomeroon at least, is warrap: the old-time Surinam Dutch called it graaf (BER, 23).

Cupana, or guaraná: The Indians of Yavita (on the Atabapo River, a branch of the upper Orinoco) scrape the seeds of a species of *Paullinia*, mix them with flour of cassava, envelop the mass in plantain leaves, and set it to ferment in water till it acquires a saffron yellow color. This yellow paste, dried in the sun and diluted in water, is taken in the morning as a kind of tea. The beverage is bitter and stomachic, but it appeared to me (says Humboldt) to have a very disagreeable taste (AVH, II, 365). The *Paullinia* above referred to is probably *P. pinnata*, which is a synonym of *Serjania cutassavica*, the sacobora of the vernacular.

268. Plantain drink is recorded by Gumilla from the Orinoco. Before getting too much sun dried the Indians knead plantains with warm water, and the dough, which takes on acidity, is subsequently strained with warm water into jars and ferments like must, which results in a very strong drink that even in small quantity produces drunkenness (G, II, 239). Couscou was a banana drink (?fermented) made by the Carib Islanders (RO, 501). Yahé, says Crévaux, is an intoxicating liquor made from a certain bark, macerated in water, but no further particulars are given. He met with it among the Coréguaje of the upper Yapura River, one of the northern branches of the Amazon (Cr, 362).

269. Of the many nonfermented liquors known to the Indians perhaps the most important on the coast lands is that obtained from the ite palm, either from the trunk or from the fruits. In the former case the tree has to be felled. When fallen, a concavity is made in the upper surface about the middle of the trunk, the excavation is covered with leaves, and in about half an hour's time the sap will be found collecting there. It is drunk without any further preparation. This beverage is the Warrau ohi(ju)-hobi (lit., ite drink) and the pulke of the Orinoco Indians (G, 1, 147). Among the Makusi to accelerate the collection of the sap, the upper end of the trunk is raised on a scaffolding of about a foot to 18 inches high and a fire lighted under its whole length (SR, 11, 203). When the drink is made from the fruits the tree need not necessarily be sacrificed. The large bunches of fruits, when more or less mature, are stacked in a close heap and covered with a thick layer of the leaves for some four days, at the end of which time the fruits will all be found to have dropped from their stalks. The Indian then digs a pit in the swampy ground about 3 feet wide by 2 feet deep, into which the water wells up from below, and into this he throws basketful after basketful of the fruits. A thick covering, composed of many layers of ite leaves, is again placed over the whole, which is left as it is for about eight days. By this time the seed coverings will have become soft, and hence can be easily scraped off, a procedure in which the Indian will probably be assisted by his family, who either come and work at it on the spot or carry the mush home with them. When removed this soft stuff is mixed, as required, with water and a little honey and thus drunk. It tastes good and is said to be very fattening.

270. The turu (*Oenocarpus*) and manicol (*Euterpe edulis*) drink, being prepared on identical lines may be described together: When the fruits are ripe (i. e., black) the palm is felled if the Indian is too lazy or unable to climb it. They are packed in baskets and carried home, where they are placed in a wooden trough and warm water poured over them. (Boiling water would render them hard.) Here they are left for about 20 minutes, when they will become soft. They are then removed from the trough and pounded in a mortar, the seeds being either picked out by hand or allowed to remain. The mush is drunk with a little honey, and mixed with more or less water according to taste, some Indians preferring it thick and others thin. In Surinam the *Oenocarpus* drink was known as kumu (St, 1, 391; AK, 78-79). The seeds of the lu palm (*Oenocarpus* sp.) taste very like those of turu. After softening the skins in tepid water, they are drained off and crushed in cold water. Assái is a drink made from the *Euterpe oleracea* (RS, 11, 519).

271. The fruit of the awarra palm (*Astrocaryum tucumoides*) also furnishes a common beverage. The soft seed covering is cut off in thin slices, a number of which are pounded up in a mortar so as to form a thick paste. This will "keep good" for about three days, and during this period portions of it may be mixed with honey or sugar water according to taste. In Surinam the drink was prepared somewhat differently, according to the account left us by Kappler. The ripe fruit was buried in the ground for a day or two, while the seed coverings became soft, when they were easily separated by pounding. The mush was next overlaid with heliconia leaves, and pressed into a plaited basket, and the whole dipped into the cold water of a creek where it was kept a few days, whereby the oily substance in the thready flesh became more fluid, the outside leaves preventing the water from getting inside. A handful of this soft stuff squeezed into a calabash of water colors it red and gives it an agreeable acid-sweet taste. When mixed with sugar it is a delightful drink (AK, 144-145). The paripi palm (*Bactris minor*) is utilized by the Carib for obtaining a sweet drink from the fruit (SR, II, 418). From the arakodak, or arikodako, and hitchia (*Byrsonima spicata*) berries, the Arawak names of two plants, only the latter of which I have succeeded in identifying, are obtained drinks by pounding, picking out the seeds, mixing the remainder with water, and straining. Both are used in the Pomeroon district, the former also on the Berbice, where it is spoken of by Dance as "very delicious." This author also mentions a drink made from the Hiawaraballi berries (probably *Protium heptaphyllum*=*Burseia guianensis*), the tabara-huik of the Akawai, but no further particulars are furnished (Da, 55). Other fruits utilized for making drink are the *Psidium turbiniflorum*, *P. pomiferum*, and *Eugenia* sp. (SR, II, 11, 12).

CHAPTER XV

ETIQUETTE OF EATING AND DRINKING

Carrying and cutting up of the food (272); food may be shared (273); no fixed hours for meals, sexes usually dining separate (274); cleaned hands (275); avoidance of certain foods (276); drinking and eating are independent, "excuses" for drinking (277); ceremonial of drinking (278); male or female attendants (279); intoxication (280); "pick-me-ups" (281).

272. Whatever game or fish he may have caught, the Arawak, Warrau, Carib, or Akawai hunter will never himself bring it to the house, the invariable rule being for him to leave it either at some distance on the pathway or at the waterside, whence it is the business of the women to fetch it. Immediately a bush hog is killed the dorsal "stink" gland is cut out and removed, while the pizzle is next incised, drawn out, and tied in a knot. Two slits in the skin are cut down one side of the neck, and through them is passed a fiber string of vine, which is wound around the snout so as to draw the creature's head well down and over to one side. Each front leg is next tied to its corresponding hind leg, and the hunter will now carry the beast on his back by passing his arms through the tied limbs, just as if they were side straps of a shoulder basket. The fixation of the animal's head prevents it dangling over the person carrying it. A deer is carried in similar fashion. It is the woman's business to cut up and clean all the smaller game, such as acouri; and man's work to cut up the larger, such as tapir, deer, and bush hog, though to the woman falls the lot of cleaning and preparing their entrails. The Taruma men hunt singly and bring in their own game, clean in the boat the fish that they have caught, cut them up ready for the pot, and bring them to the house. The Parikuta men will likewise clean the fish in the boat before reaching the landing, but will send their women to fetch them (JO).

273. In those cases where the people live in community the food so brought in may be proportionately divided by the "chief." Thus, on the Orinoco, the fishermen, leaving their canoes without touching a fish in them, proceed up to their houses to rest. The women and boys, according to the different clans (*capitanias*), load up the fish and heap it before the doors of the captains. These divide the spoil in due proportion among the heads of families, according to the smaller or larger number of children (G, I, 173).

274. Indians have no fixed hours for their meals. They eat when they are hungry, and drink when they are thirsty (FE, 80), which would account for their usually eating the moment they awake (HiA, 29), and at evening when they return from hunting (BA, 325). So among the Guinau, their chief meal is in the morning and evening, consisting of a pot of fish or meat; or, for want of them, of a sauce made of the leaves and fruits of the capsicum. This is first set before the head of the family, who shares it with the men and guests. The women afterwards take what is left (ScF, 225). Stedman speaks of the Indians tying ropes round their naked bodies when their abdomens are shrunk with hunger (St, I, 281). Among the Galibi, those that are married dine everyone apart, and those that are unmarried eat all together; and all the women, maids, and little children go to another side of the hut to eat (GB, 28). This would seem to be the rule almost everywhere, the two sexes having their backs turned to one another. No Indian wife eats with her husband (St, I, 398). Whatever friendship an Indian may have for his wife she never has the satisfaction of eating with him. She waits on him, on the contrary, and then goes to eat with her children (FE, 80). On the other hand, it is recorded of the Nourague and Acoqua, of Cayenne, that they do quite otherwise, for the husband eats with his wife, or wives, and children, with admirable agreement and union (GB, 28). I have seen the same thing among the Taurepang (Arekuna) at Roraima. It is usual not to speak or drink during meals.

275. Hands are washed before and after meals. To dry the hands and mouth one will find in the houses on the upper Yary a sort of duster (*torchon*), made of bark (Cr, 118). The Island Carib were also noted for their cleanliness in eating and in cooking. They always wash their hands carefully before eating, and even in their cooking they touch nothing of what they are going to eat except with clean hands (RO, 497). The meal is usually placed upon a mat laid on the ground. The hand often plays the part of a mat or, rather, a plate. Thus, the Oyambi, after the manner of all Indians, do not, like us, tear the meat with their teeth, but tear it with their fingers, and carry it to the mouth in little pieces. The left hand serves them for a plate. With the right hand they take the bit of cassava between the third and little fingers, and the meat between the thumb and forefinger. They economize labor in only employing one hand to put meat and bread into their mouths (Cr, 206).

276. Hilhouse has stated that the Carib are very indiscriminate in the use of animal food. Nothing comes amiss to them. "Tigers," cats, rats, frogs, toads, lizards, and insects are equally welcome with fish and game. If they show any predilection, it is in favor of fish (HiC, 237). The Island Carib, however, seem to have specially

avoided pig, turtle, and manati, and to have eaten game or anything salted only when entertaining their guests (RO, 500); while among certain Surinam Carib snakes and large sea turtle were taboo (AK, 188). Schomburgk likewise noted the variations of food eaten by different tribes (SR, II, 434). Of course, among all the tribes certain foods were taboo at various times and seasons, as during pregnancy, while traveling over water, at certain ceremonies (e. g., puberty, marriage, death), and particularly so because of their "foreign" origin. Such foreign element refers to stranger Indians as well as to Europeans. The Makusi eat this fish (*Doras* sp.), but our Akawai threw it next morning into the water (Da, 227); while of the Orinoco Indians Gumilla says you would not find a Jew who had such a horror of sucking pig and the domestic hog as those said gentiles had; but after being instructed and baptized they would go mad after it (G, I, 119). Schomburgk was asked not to eat sugar cane or sugar while his Indian friend was making the curare poison (sec. 122). In a former work (WER, VI, secs. 242-251) I have fully detailed the whole subject of food taboo.

277. It is true that Indians drink but little or nothing at their ordinary meals until they have finished eating, and then commonly drink one draft; but when they assemble together for a drinking party they keep up the revelry until they have drunk up all their liquor; and this may, on occasion, last for three or four days (GB, 50-52). As soon as an individual has drunk all he can he will vomit it up and drink more. This vomiting is to some extent part of the festivities, because he never once leaves his seat (AK, 186) or hammock. Coudreau has seen an individual drink after this fashion 4 or 5 liters of cassiri in half an hour (Cou, II, 311). At Poika, in Surinam, Joest describes meeting with a "drinking" canoe having a capacity of 2,000 liters (WJ, 91). As with their more civilized brethren, excuses for such debaucheries were never lacking: Holding a council of war; the return from such an expedition (whether successful or not); the birth of their first born male child; the cutting of their children's hair; upon reaching the age to join in battle; upon the clearing of a field (when the drinking party is known by a special term—e. g., massaramanni (Ara.), kai-appa (War.)); launching a new ship; convalescence after illness, etc.; all helped to serve the Island Carib with opportunities for a good old "drunk" (RO, 511). In Cayenne the mainland Carib would have a drinking feast when commencing to build, as well as when launching, the vessel (GB, 50-52). Such drinking is invariably combined with dancing.

278. Perhaps dependent upon the object for which the drinking feast was given, so might variations take place in its so-called ceremonial. The following account is given by Schomburgk of what took

place among the Akawai, on the Barima River, at a drinking party, the master of ceremonies proceeding as follows: "Shortly after sundown he took his big bamboo, wound round with long threads, to which thevetia seeds were attached, and gave the signal for the dance to begin. The men all sprang out of their hammocks and surrounded the paiwarri trough in a half circle at a distance from it. The M. C., bending down, takes two steps toward the trough and then one backward, and repeats this slowly right around the receptacle. This to-and-fro movement is taken up by the people in the circle, but these keep themselves erect, each individual placing his left hand upon the right shoulder of his neighbor. And as they all proceed round, their movements are regulated by a song, but the meaning of the words has been lost; the words have been handed down from father to son. The M. C. sings first one word and the others then take it up in chorus. After the procession had circled the trough several times the dancers took breath, and then let out a fearful yell (sec. 583). The women now came forward, filled the calabashes from the trough, and handed the drinks round" (SR, I, 206). When drinks are thus offered the calabash will be handed by the distributor to the head of the visitors, who will sip it and pass it on to the next, and so on. When emptied it will be handed back in exactly the reverse order to the chief visitor, who returns it to the person who originally gave it to him.

279. It is usually but not always the rule for the women to hand round the drinks at a party (sec. 902), while to refuse a drink tends to cause suspicion and distrust and to change friendship into hatred (SR, I 207). The drink is distributed by one of the prettiest young girls, who keeps three or four fingers inside the calabash and the thumb outside and so offers . . . the Indians the way to drink, without anyone touching it with hand or finger, except only when he has had enough and pushes the calabash away from him. The larger the company the greater the number of girls who hand round the drink; in want of these, the women also take on the job (BER, 46). This will perhaps explain the idea of secreting the poison under the finger nail when revenge is contemplated (sec. 734).

280. As to intoxication at a drinking feast, certain women, as well as certain men, whose business it is to keep sober especially for the purpose, hide away all weapons on the first signs of inebriety. The women will carry some of the disturbers of the peace to their hammocks and tie them up firm (SR, I, 208)—a position from which no amount of exertion or raging can free them, and where, with continued swinging, they soon fall into a deep sleep (SR, I, 179). The same plan is followed on the Pomeroon at the present day, where it is usually the house master or mistress, perhaps both, who purposely keep sober to put an immediate stop to any rows and disputes arising.

Pinckard, speaking of the Arawak Indians on the Berbice, says: "They are very fond of drinking rum and eagerly swallow it to intoxication. But they observe a kind of method in their drunkenness, for when they come to the towns in bodies of considerable number it is remarked that half the party will freely devote to Bacchus, while the other half carefully refrain, in order to watch the helpless; and these, when restored by sleep, are observed to take their turn of watching, and to guard their late protectors through similar visits to the deities of turbulence and repose. They have no pleasure in long sipping, but swallow large drafts of rum or drink quickly glassful after glassful till they are unable to move" (Pnk, I, 519).

281. Schomburgk says it was apparent that the Akawai on the Barima ate the snail, *Ampullaria urceus* Fers, as a "pick-me-up" for the nervous system after a "spree," in the same way as herring salad is used among the Germans (SR, I, 208). The same traveler speaks of another species, *A. orinoccoensis* Ziegler, as being eaten by Carib on the upper Pomeroon (SR, II, 425), the text showing that the Indians had been drinking the night before. A more drastic remedy would seem to have been in vogue in Surinam, where plaited mats and girdles, with stinging ants attached, would be placed upon the backs of the helplessly intoxicated guests (WJ, 91).

CHAPTER XVI

NARCOTICS AND STIMULANTS

Tobacco: Preparation (282); smoking (283); chewing (284); licking (285).
 Yupo, niopo, or parica (*Piptadenia*) (286); Ypadu (*Erythroxylon*) (287);
 Caapi (*Banisteria*) (288); Capsicums (289).

282. *Tobacco* (*Nicotiana tabacum*).—The term tobacco does not appear to have been a commonly used original name for the plant. It has come to us from a peculiar instrument used for inhaling its smoke by the inhabitants of Hispaniola (Santo Domingo). The instrument described by Oviedo in his *Historia de las Indias Occidentales*, Salamanca, 1535, consisted of a small hollow wooden tube shaped like a Y, the two points of which, being inserted into the nose of the smoker, the other end was held into the smoke of burning tobacco, and thus the fumes were inhaled. This apparatus the natives called “tabaco,” but it must be said that the smoking pipe of the continental tribes was entirely different from the imperfect “tabaco”

of the Caribees. Benzoni, on the other hand, whose travels in America in 1542–1556 were published in 1565, says that the Mexican name of the herb was “tabacco” (*Encycl. Brit.*, 9th edit., xxiii, 423).

At every Indian settlement some tobacco plants will be found cultivated in the provision

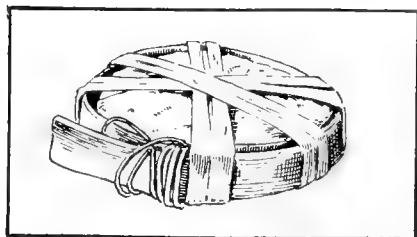


FIG. 65.—Tobacco being pressed. Aiary River.

fields. According to the statement of the Wapishana, wild tobacco grows at Mount Urawai, on the upper Takutu (SR, II, 77). When once planted, no further attention is paid to it, and the leaf is cured in the most simple manner, by being hung up in the Indian's hut (ScD, 109). The leaves are plucked when the blossom “bursts.” They are sometimes, though not always, dipped in honey; under any circumstances they are hung up until they commence to get yellow. After that the leaves are evenly arranged, side by side, and are lightly tied in bundles the size of one's fist. As the leaves dry the strings round the bundles are drawn tighter and tighter, until it is evident that no further diminution will take place in the bulk (IT, 317). On the Rio Aiary the leaves are slowly dried on a sifter in the neighborhood of the fireplace, dampened again, and pounded in a mortar. By means of a bark band and smaller strips the leaves are now made up into a flat circular cake (fig. 65)

and dried in the sun in this elastic press, which is tightened up from time to time (KG, I, 140). All over the Amazon Valley tobacco is grown and manufactured, the leaves being bound round together with the split stem of a climbing palm into long rods of about 2 inches in diameter and 4 or 5 feet in length, tapering off to a point at both ends (BL, 102). In this form it may be met in Surinam among the Oyana and Trio (GOE, pl. VIII, fig. 11), and in our own colony.

283. If tobacco is to be smoked it is smoked only in the form of cigarettes, the paper-like substance obtained from the bark of certain trees, sometimes leaves, being employed as wrappers. In the case of the kakaralli or sapucaya nut (*Lecythis* spp.) a long strip of bark of exactly the width required is cut from the tree with straight sides and ends. From this the outer rough bark is removed. With a thick short stick the Indian then repeatedly strikes the cut edge of one end of the inner bark with a peculiar but indescribable knack so as to separate it into a great many even-surfaced sheets (IT, 317). With the *Courataria guianensis* Aubl. of the lower Amazons (S-M, 918) it would seem that the bark is cut in long strips, of a breadth suitable for folding the tobacco. The inner portion is then separated, boiled, hammered with a wooden mallet, and exposed to the air for a few hours (HWB, 164). Other materials that may be used for cigarette wrappers are leaves of Indian corn, as practiced by the Maiongkong (ScF, 237), and the inner lining of the spathe of the manicol. After the cigarette is made the wrapper is prevented from opening by being tied either at the center or at the ends with a very thin strip of corresponding material, not into a knot, but into a twist. On the upper Rio Negro is to be met what is practically a

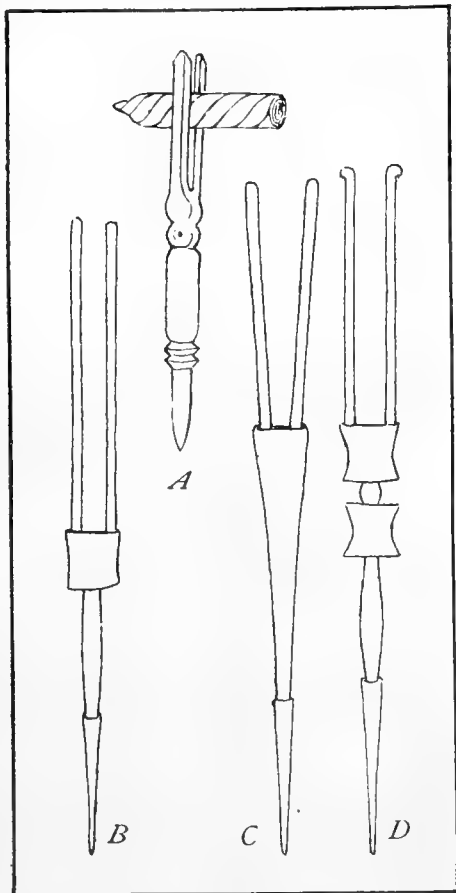


FIG. 66.—Cigar holders of the Uaupes Indians. (A, after ARW; B, C, D, after KG, I.)

cigar from 8 to 10 inches long and an inch in diameter, made of tobacco, pounded and dried, and inclosed in a cylinder made of a large leaf spirally twisted. It is placed in a cigar holder about 2 feet long, like a great two-pronged fork (pl. 52, A; fig. 66). The bottom of the holder is pointed, so that when not in use it can be stuck in the ground (ARW, 206, 352). Such cigar holders with contained cigars are handed round on occasions of festivity (ARW, 195; KG, I, 282). The degree to which the smoking habit prevails varies in different tribes. With the Carib both sexes are great smokers, even children at an early age commencing to indulge in the custom (ScB, 192). Among the Gualaquiza Jiráros. . . great festivities are held when a child is, at 3 or 4 years of age, initiated into the art and mysteries of smoking (AS, 92). Among the Arekuna, Appun speaks of tobacco being smoked in clay-headed pipes with a bamboo stem. The women were debarred from smoking (App, II, 309). The Trio women were never seen smoking (GO, 26). Akawai, male and female, make almost continual use of tobacco (BR, 276). Among the Ouitoto each takes three whiffs and passes the cigar to his neighbor (Cr, 371). Certainly with the old Arawak on the Pomeroon it appears to have been their nightly practice to make one or two cigarettes ready for the following morning, slipping them, within easy reach, between the scale lines of their hammocks. While smoking the spent ashes are licked up (sec. 285) with the tongue as occasion arises. They may almost be said to be consumed.

284. If tobacco is to be chewed it is mixed with certain ashes or salt. The ashes are obtained from a species of fresh-water alga, *Mourera fluviatilis* Aubl., called by the Indians oulin, huya, weya, etc., which they gather from the rocks in the falls and rapids of many rivers. It is of a pleasant salt taste, and is mixed with fine strips of Indian-cured tobacco, and kept in little goobies or gourds with a small opening. A stick to use as a fork is placed in the gourd, its upper extremity projecting through the stopper, so that the stopper acts as cork to the gourd, and as both guard and handle to the fork. The mixture of oulin and tobacco, which is moist and agreeable to the taste of a user of tobacco, is called kawai. It is kept in the mouth, in a very small quantity at a time, and answers the purpose of plugs of chewing tobacco. Two falls in the Ireng River, and one in the Cotinga River, at about 50 miles distance from Roraima, are called Orin-doui or Olin-toueuk, the falls of the ourin or oulin (Da, 197). It is to these Orindoui Falls on the Ireng that the Patamona Indians come for the purpose of collecting this plant (BB, 281). In the Patamona houses it was very common to see bags of leaf, tied round with a string and hung a few feet over the fire.

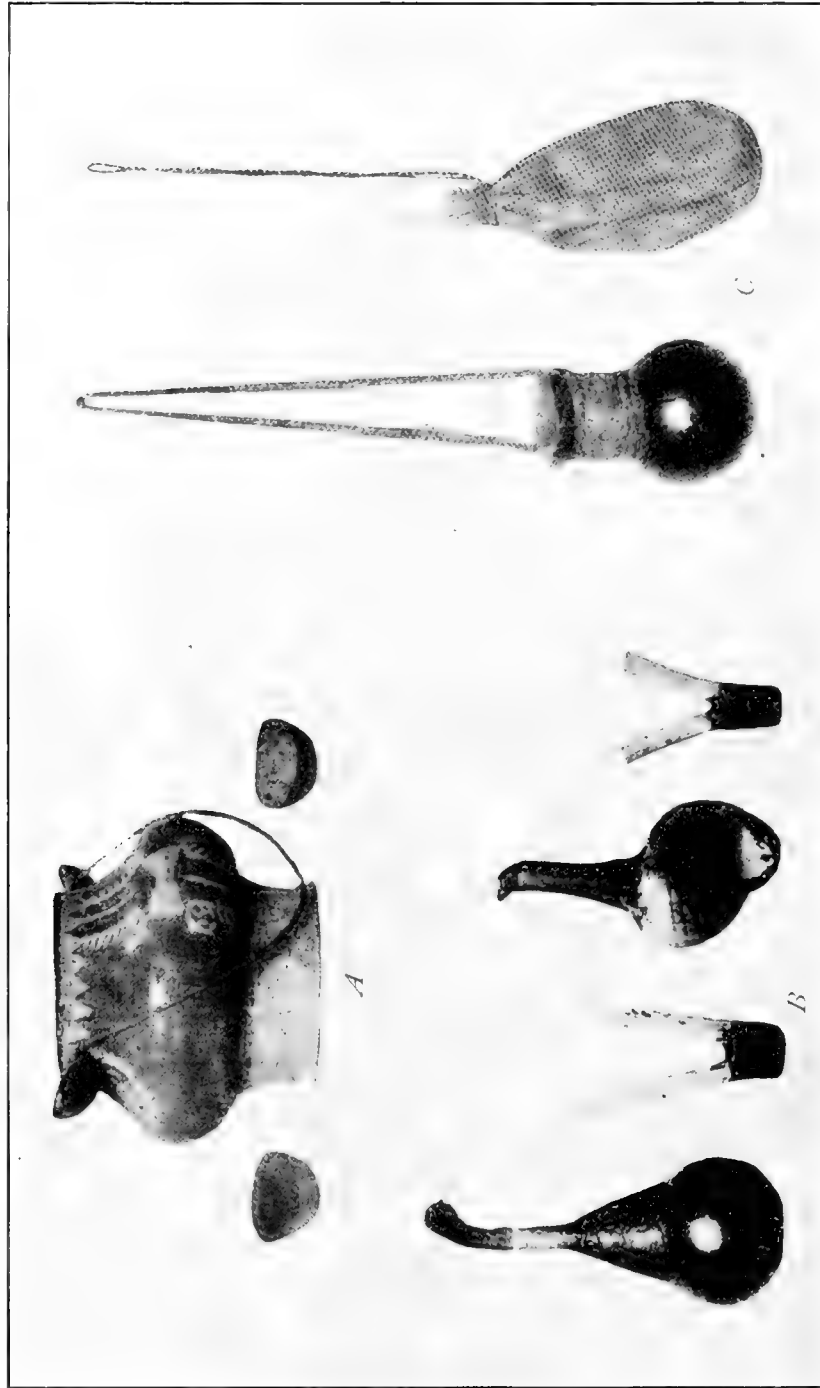


A, Tukano smoking cigar in special holder. (After Koch-Grünberg.)



B, Method of snuffing piptadenia among the Ouitoto. (After Crévaux.)

NARCOTICS: TOBACCO AND PARICA



APPARATUS USED IN CONNECTION WITH NARCOTICS

A, Special clay vessel in which *Banisteria caapi* is invariably kept. (After Koch-Grünberg.) *B*, Apparatus for inhaling piptadenia snuff on the Rio Tiquié. (After Koch-Grünberg.) *C*, Bast sack and calabash for collecting and preserving *Erythroxylon coca*. Uaupes River district. (After Koch-Grünberg.)

These bags contained the oulin which, if not continually kept dry by this means, would melt. The following procedure given by Brett (Br, 276), as quoted from McClintock, was adopted by the Akawai for preparing the chewing mixture: "They take from the stalk as many green leaves as will cover the pan on which their cassava is baked. Over this layer of tobacco leaves they sprinkle the salt (oulin), then another layer of green leaves, and salt as before. This must be repeated until the whole becomes 1 inch or more in thickness. A slow fire is then applied to the pan, and after the cake, if such it may be called, is partially heated, it is removed and distributed among a number of small calabashes, where it remains until 'quids' be in demand; not, however, to be chewed, but to be kept simply between the lips. By this method the teeth are preserved, hunger appeased (Indians always assure me of this), and thirst is quenched."

B. Brown gives a none too pleasant description of Indians indulging in the habit: "Every man and nearly every youth [Akawai] had a dirty greenish pellet . . . held between his lips, which he rolled about every now and then. A dark greenish juice oozed from it, staining the lips, and sometimes trickling down from the corners of the mouth, the presence of the ball causing their lips to separate and protrude (BB, 64). Among the Arekuna the tobacco leaves are not dried, but finely chopped up while still fresh, and with a black niter-containing earth (which they collect in the savanna), kneaded to a dough, out of which the small balls are made" (SR., II, 239). Schomburgk had not observed tobacco chewing in any other tribe.

285. Ouitoto of the upper Yapura have a peculiar practice of tobacco licking, a sort of ceremonial oath taking. Tobacco leaves are cooked with water to a sirupy consistency into which the fore and middle fingers are dipped and then licked off (KG, II, 302).

286. *Piptadenia peregrina* Benth. (= *Mimosa acacioides* Benth.) yupa, niopo, parica, etc.—Gumilla has furnished us with the following particulars from the Orinoco: "The Otomac intoxicate themselves with certain evil powders, which they call yupa, inhaled through the nostrils. Their judgment entirely leaves them, and, maddened, they take up arms. Were it not for the women being so smart in intercepting and preventing them they would be committing cruel outrages daily. They make the said powders of certain plants, from yupa, which gives them their name. These simply have the smell of strong tobacco. It is what is added through the ingenuity of the devil that causes the intoxication and madness. After having eaten certain large snails, met with on lands subject to inundation, the shells are placed on the fire and reduced to lime. This lime is mixed with the yupa in equal quantities. So strong is the mixture

that even if the finger which has only touched it is placed near the nose a fit of sneezing results. The Otomac use it before going into battle with the Carib. The Saliva as well as other Indians employ yupa, but as they are meek, good-tempered, and faint-hearted nations they do not become so infuriated as our Otomac" (G, I, 181). About a century later Humboldt, traveling among the Otomac, speaks of the preparation of the drug as follows: "They gather the long pods . . . cut them into pieces, moisten them, and cause them to ferment. When the softened seeds begin to grow black they are kneaded like a paste, mixed with some cassava flour and lime procured from the shell of a helix, and the whole mass is exposed to a very brisk fire, on a gridiron made of hardwood. The hardened paste takes the form of small cakes. When it is to be used it is reduced to a fine powder and placed on a dish 5 or 6 inches wide. The Otomac holds this dish, which has a handle, in his right hand, while he inhales the niopo by the nose, through the forked bone of a bird, the two extremities of which are applied to the nostrils. This bone, without which the Otomac believes that he could not take this kind of snuff, is 7 inches long. It appeared to me to be the leg bone of a large sort of plover. The niopo is so stimulating that the smallest portions of it produce violent sneezing in those who are not accustomed to its use" (AVH, II, 505). Along the main shore of the Parima River, below Fort San Joachim, Schomburgk found numerous trees of this mimosa, the seeds of which are used by several tribes of Indians along the Rios Amazon and Negro, as the Uaupes, Puros, etc. They are pounded to powder and the smoke inhaled, or the powder is put into the eyes, nose, and ears, which produces a state of intoxication or madness which lasts for hours, and during which time the Indians have no command of themselves or their passions. A general stupor succeeds, which sometimes lasts for days (ScE, 182; SR, II, 103). Bates gives the following description of the manufacture and use of the drug among the Mura of the lower Amazon: "The seeds are dried in the sun, pounded in wooden mortars, and kept in bamboo tubes. When they are ripe, and the snuff-making season sets in, they have a fuddling bout lasting many days, which the Brazilians call a quarentena, and which forms a kind of festival of a semireligious character. They begin by drinking large quantities of caysúma and cashiri, fermented drinks made of various fruits and mandioca, but they prefer cashaça or rum when they can get it. In a short time they drink themselves into a soddened, semi-intoxicated state, and then commence taking the paricá. For this purpose they pair off, and each of the partners taking a reed containing a quantity of the snuff, after going through a deal of unintelligible mummary, blows the contents with all his force into the nostrils of his companion. The effect . . . is wonderful. They become exceedingly talkative,

sing, shout, and leap about in the wildest excitement. A reaction soon follows. More drinking is then necessary to rouse them from their stupor, and thus they carry on for many days in succession. The Mauhé also use the paricá, although it is not known among their neighbors, the Mundurucu. . . . The Mauhé keep it in the form of a paste and employ it chiefly as a preventive against ague in the months between the dry and wet seasons, when the disease prevails. When a dose is required a small quantity of the paste is dried and pulverized on a flat shell and the powder then drawn up into both nostrils at once through two vulture quills, secured together by cotton thread. The use of paricá was found by the early travelers amongst the Omagua, a section of the Tupi who formerly lived on the upper Amazon, 1,000 miles distant from the homes of the Mauhé and Múra" (HWB, 169). De la Condamine thus relates how the Omagua make use of two sorts of plants, one of which is called by the Spaniards "floripondio," whose flower, resembling a bell turned upside down, has been described by Father Feuillée; the other, in the language of Omagua, is named curupa, some seeds whereof I have brought with me. Both of these are cathartic or purging. But these people make use of them to intoxicate themselves therewith, for the space of 24 hours, during which time they have strange visions. They take also the curupa reduced to powder as we do snuff, but with somewhat more formality. They make use of a pipe formed out of a reed and ending in a fork; in short, shaped like a Y; each of the branches of this instrument they put into one of their nostrils, which operation, being followed by a violent drawing in of their breath, causes them to screw up their faces, after a manner very ridiculous to a European, who would have everything conformable to his own customs (LCo, 36).

Within still more recent years, Crévaux (Cr, 550), when traveling through the country of the Guahibo (=Guajiva of the Meta River referred to by Gumilla), mentions how at every instant they put to their nostrils a blackish brown powder resembling snuff tobacco, both in color and odor, very finely ground, and which they call yopo. He further tells us that in order to obtain it they roast the green seeds . . . and pulverize it with calcined snail shells (Cr, 550). This snuff was apparently identical with the aromatic powder of a composition unknown to him, to which he had previously referred as taken by the Ouitoto (of the Yapura River) in so peculiar a manner, and now identified as the yupa or paricá snuff. Its manner of use, by means of a special apparatus, is thus described by him: "Their snuffbox is formed of a large *Bulimus* shell, of which the base is covered over with a bat's wing fixed with balata. The extremity of the cone carries a hollow bone, through which one pours an aromatic powder (pl. 53 B). To bring the dust

to the nostrils they employ a blower composed of two hollow bird bones fixed with balata. One branch being introduced into the mouth and the other into the nostril, a puff of breath is sufficient to send the powder into the more remote portions of the mucous membrane. This is the method employed by the egoist. Sociable people have another device—two bones arranged like an X. Friends draw near (pl. 52 B), blow together, and mutually give one another a pinch of snuff" (Cr, 371). And, subsequently to Crévaux, E. A. Wallace obtained from the Guahibo a curious powder, which is taken like snuff and has the effect of making them drunk. . . . They were evidently in a happy state while under its influence. He says: "This yopa (in Spanish spelled llopa) is probably known in other parts, as I have heard the word enllopado used by the New Grenadians as signifying drunk" (Ti, Dec. 87, p. 317). In the present century mention has been made of the preparation and use of the drug on the Tiquié, a branch of the Rio Negro (KG, I, 323), where it is kept either in a snail shell or in a small spherical calabash. Its use is also recorded on the Apaporis (KG, II, 290).

287. *Erythroxylon coca* Lam., ypadú, ipadu.—"On the upper Amazon the half-caste and Indian women, after middle age, are nearly all addicted to the use of ypadu, the powdered leaves of erythroxylon coca. . . . Persons who indulge in ypadu at Ega are held in such abhorrence that they keep the matter as secret as possible. . . . They plant their little plots of the tree in retired nooks in the forest and keep their stores of the powder in hiding places. . . . I once [says Bates] had an opportunity of seeing it made at the house of a Marauá Indian on the banks of the Jutahi. The leaves were dried on a mandioca oven and afterward pounded in a very long and narrow wooden mortar. When about half pulverized a number of the large leaves of the *Cecropia palmata* (candelabrum tree) were burned on the floor and the ashes dirtily gathered up and mixed with the powder" (HWB, 283). The drug is also referred to on the Tiquié (KG, I, 266-267) and on the Apaporis (KG, II, 290). (See pl. 53 C.)

288. *Banisteria caapi* Griseb., caapi.—Among the Guahibo (Orinoco River) the piai warms over the fire a little yellow root known by this name and chews it when he has to make a cure. It has intoxicating properties (Cr, 536). Compare this with what is said by E. A. Wallace of the same tribe: "They chew the wood of a curious liana, which has the same effect as the leaves of the erythroxylon coca. They can travel great distances existing only on the wood of this plant and do not feel the want of any other sustenance" (Ti, Dec., 1887, p. 317). The first mention of this drug, however, on the Rio Negro among the Uaupes River Indians, who drink the infusion, appears to have been made by A. R. Wallace: "Presently (after the caxiri) the

caapi was introduced. An old man comes forward with a large, newly painted earthen pot, which he sets down in the middle of the house. He then squats behind it, stirs it about, and takes out two small calabashfuls, which he holds up in each hand. After a moment's pause two Indians advance with bows and arrows or lances in their hands. Each takes the proffered cup and drinks, makes a wry face, for it is intensely bitter, and stands motionless perhaps half a minute. They then with a start twang their bows, shake their lances, stamp their feet, and return to their seats. The little bowls are again filled and two others succeed them with a similar result. Some, however, become more excited, etc." (ARW, 205). Spruce says that the cupbearer must be a man, because no woman can touch or taste caapi (RS, II, 419). Half a century later Koch-Grünberg reported the drug from the same area, described its preparation, the special type of colored earthen jar (pl. 53 A) in which it is invariably kept (KG, I, 298), and mentions the fact of certain rattle spears and shields only being employed on occasions of caapi drinking" (KG, I, 345).

289. *Capsicum*.—The use of peppers as a stimulant and excitant by the Makusi of the Rupununi might be included here. A small gourd (fig. 67) with an elongate neck, known as kassakra, is filled with crushed peppers and water. It is inserted into the nostril of the patient suffering with headache and the contents poured in (V. Roth). In the Pomeroon district it is a very common practice for the Indian women to give capsicum enemata to themselves and children by means of an apparatus made from the bladder of any of the larger-sized animals (sec. 921).

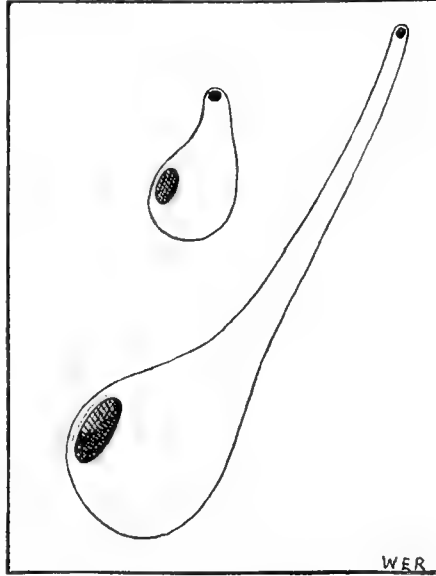


FIG. 67.—Gourds for pouring pepper juice into the nostrils. Makusi.

CHAPTER XVII

HUTS AND HOUSES

Conditions affecting site (290).

Protection and defenses, palisades (291).

Change of residence (292).

Banabs or temporary shelters: Rectangular (293); triangular (294); lean-to (295).

Portable rain shelters (296).

Outhouses (297).

Permanent houses, classification of:

Lean-to (298).

Arched (299).

Circular: Distribution (300); construction of framework (301); walls (302); door (303); variations with two main posts (304); with three (305); with none (306).

Elliptical (307).

Nomenclature (308).

Rectangular: With one semicircular end (309); with both ends vertical (310). In the Pomeroon district (311); in Cayenne (312); nomenclature (313).

Pile and other dwellings (314-317).

Thatch and how used (318-324).

House decoration (325).

Furniture (326).

Houses in the islands (327).

290. The evidence appears to be far from satisfactory as to the conditions limiting the choice of site upon which an Indian will build his house. On the one hand, selection may depend upon purposes of concealment, and on the other upon suitability of observation for the approach of enemies. Thus it is said of the Demerara Indians that they very seldom erected their houses upon the immediate banks of the river, and whenever they happened to fix upon a situation near to it, they were careful to leave some of the bush standing for the purpose of concealing the building. More frequently they established their dwellings upon the borders of the creeks, or within the woods at some distance from the river (Pnk, II, 227). The situation of a settlement on the top of an exposed hill may reasonably be deemed, *inter alia*, an advantage for the inmates in keeping watch over the surrounding country through which their enemies may be lurking. An open terrain offered much less chance to the approach of an enemy not being noticed; likewise, the setting up of the provision grounds at a great distance from the residence rested

perhaps upon the same foundation. In Surinam, when choosing a new residence, the redskins, says Penard, note whether the kind of clay out of which they manufacture their pottery is present or not, and since this clay is mostly found in the savannas it comes to pass that most Carib villages are to be found on the edge of a savanna. At any and every settlement the houses would bear no regular arrangement, the one with the other; just built here, there, and everywhere, close to or distant from one another. (PEN, I, 97, 98.)

291. While it would appear that some of the island Arawak houses were palisaded (RO, 529), examples of similar constructions recorded on the mainland are rare. The first to draw attention to a palisade was Von Berkel, who, during his residence on the Berbice between 1670 and 1674, saw them at two Arawak villages on the cross path to the Demerara River. This is what he says: "The house at Ouden Amen, wherein we had slept at night, was one of those wherein the Indians defend themselves from hostile attacks. Such hostilities were practiced on various villages during my stay out there. It had a length of about 120 to 130 feet and a breadth of between 30 and 40, and was invested around with palisades as thick as an ordinary spar, with some openings between the spaces to shoot through, for which object they have recourse to their arrow and bow, not knowing how to defend themselves in any other manner. I saw likewise therein nothing in the world but bows and arrows. These houses, which have to be maintained by the villagers collectively, are thatched with leaves of an uncommon size . . . In case of fire the whole roof can be hurriedly cut away" (BER, 29). There was also at Naby an arsenal, just as in Ouden Amen village, but it was falling down, the reason being that as the area was so densely populated by the whites the Indians trusted themselves to their care and vigilance (BER, 32). In more recent times the elder Schomburgk speaks of an Arekuna settlement at Arawayam Botte being inclosed or barricaded, he himself noting that in this respect the settlement differed from others that he had seen (ScF, 205). His younger brother also came across two cases, again in Arekuna territory, near the Carimang and Carapu Rivers, respectively (SR, II, 344, 347). Appun subsequently reported them on the upper Mazaruni at an Akawai settlement above Cako Creek and at Hanare village, where four houses were inclosed. In the former case the palisade consisted of posts about 10 feet high stuck into the ground close to one another, which by means of several crosspieces all bound together with vine rope, maintained great strength. It stretched a fair distance away round the compound. Only a small door that was barred at night led into the settlement. It served as a protection against surprise

attacks of enemy Indians, as well as nocturnal visits of jaguars (App, II, 177, 179). The same traveler mentions a Makusi dwelling on the Inamara (Wanamaru) River with a huge incomplete palisading 20 feet high around it (App, II, 368). It may be interesting to note that reference is made to a palisade around an Arawak stronghold in the Folk-lore (WER, VI, 383).

Bancroft is responsible for the statement that, in order to prevent reprisals from their interior neighbors, whom they raid for slaves, the Akawai arrange that all the avenues to their houses are guarded by sharp pieces of hardwood, planted in the earth, and poisoned, except only one obscure winding path, which they use themselves and make known to their countrymen by private marks (BA, 268-269). So also in Cayenne, on the pathways leading to the cleared spaces, the Oyapock River Indians often place pointed hardwood sticks in the ground, after the manner of chevaux de frise, to prevent a passage (Cr, 169). On the other hand, among the Cayenne Galibi, the sense of security which these savages enjoyed was such that nothing was closed in. The doors were always open and entrance was free to anyone (PBA, 143).

292. Speaking of the Surinam Indians, Fermin mentions how they often changed their place of abode, but is in doubt whether this was due to fickleness (inconstance) or by way of precautionary measures (FE, 57). Schomburgk has also drawn attention to the unsettled habits of the Indian and his want of attachment to localities (ScA, 308). Among others, he gives the case of a Makusi chieftain whom he had left comfortably settled in a substantial house at Aunuay, with no thought at the time of leaving his residence and rich provision fields at the foot of the Pacaraima Mountains, subsequently felling trees at Berbice and toiling to put but a small spot of woodland under cultivation for subsistence (ScA, 305). Hilhouse has also reported on the migratory habits of the Akawai (HiA, 31); that it is one of the greatest inconveniences of travel in their country; that a populous village one year may be totally deserted the next and the inhabitants a thousand miles off (HiA, 34). Among the causes for change of residence may be noted trading, and in former times fighting expeditions, but very commonly the presence of disease or of a death, especially that of a chief, and not infrequently the exhaustion of provision grounds or scarcity of water in the immediate neighborhood. It has been stated that the Warrau on the Waini had often to leave their settlements owing to a scourge of chigoes (SR, I, 129). On the death of the house master the building may cease to be occupied, and thus allowed to go to ruin, or it may be burned (e. g., Arawak, Carib).

293. The banab or temporary shelter is so called from the Arawak term tobanna-abu (i. e., leaf with stalk), the materials of which it is

manufactured. The Warrau name is nabakobáhi and the Makusi one tapui. A banab is not only built whenever an Indian is on a hunting or fishing expedition, or is for any reason away from home, during the rainy season, but for occasional brief use at some place of repeated resort, either a good fishing ground or where turtle abound, or where some desirable plant grows, or for some similar reason (IT, 208). On the Waini they are said to have been kept in repair, and their presence in the close neighborhood indicated by

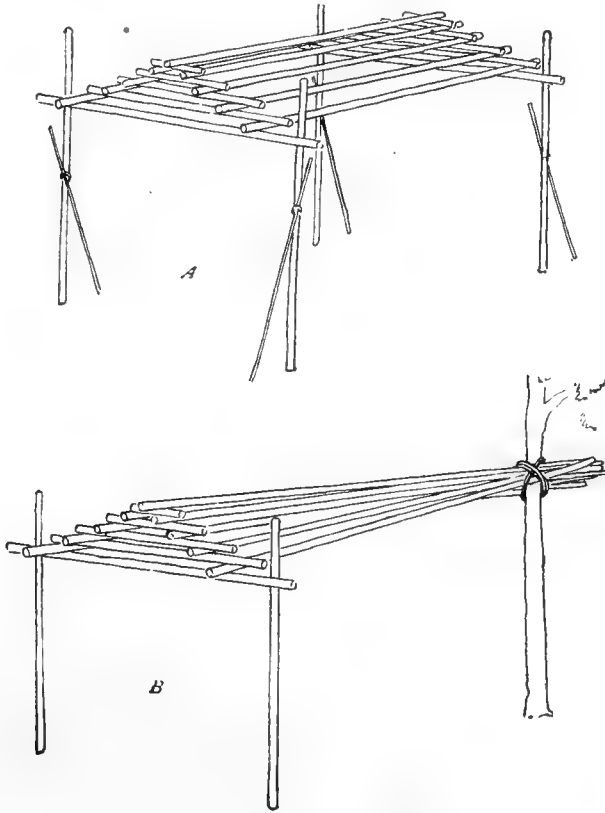


FIG. 68.—Banabs or temporary shelters. A, Rectangular type; B, triangular.

posts on the river bank (SR, I, 218). Arawak, Warrau, Carib, Makusi, Patamona, and Arekuna may make it of the same pattern—four uprights strengthened by oblique supports tied with bush ropes (fig. 68 A). At either end the uprights are tied together with crosspieces, upon which the two lowest main horizontal sticks are laid. The roof is then gradually closed in with four to six pairs of similar horizontal laths, each pair being not only successively approximated but also at the same time raised by resting them on progressively shorter sidepieces,

until the final single ridgepole is reached. All the timbers composing the roof are kept in position with vine rope, and it is hardly necessary to add that in all examples of banab any saplings of convenient size and position, if present, will be utilized in situ for the uprights. Leaves of various palms (e. g., kokerit, turu, lu, manicol), of the agave, wild plantain, etc., are lastly put on for a roof covering. The Makusi have a special name, *walamuri* (land turtle), for this particular kind of banab: the roof is supposed to represent the animal's carapace.

294. Among the Carib, Patamona, Arawak, Makusi, etc., the banab may be built on a triangular framework or "marudi-tail," as it is called (fig. 68 B), with two uprights composing the one extremity exactly like that in the Arawak structure just described. All the horizontal bars, together with the ridgepole, converge to a third post or suitable sapling, to which they will be tied at a somewhat higher

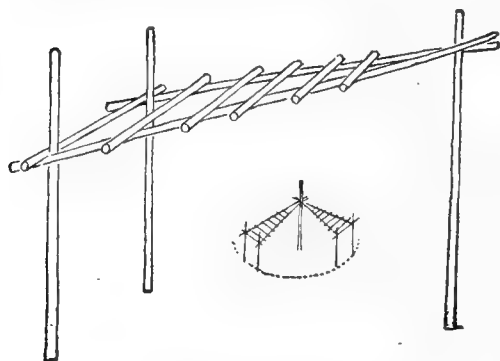


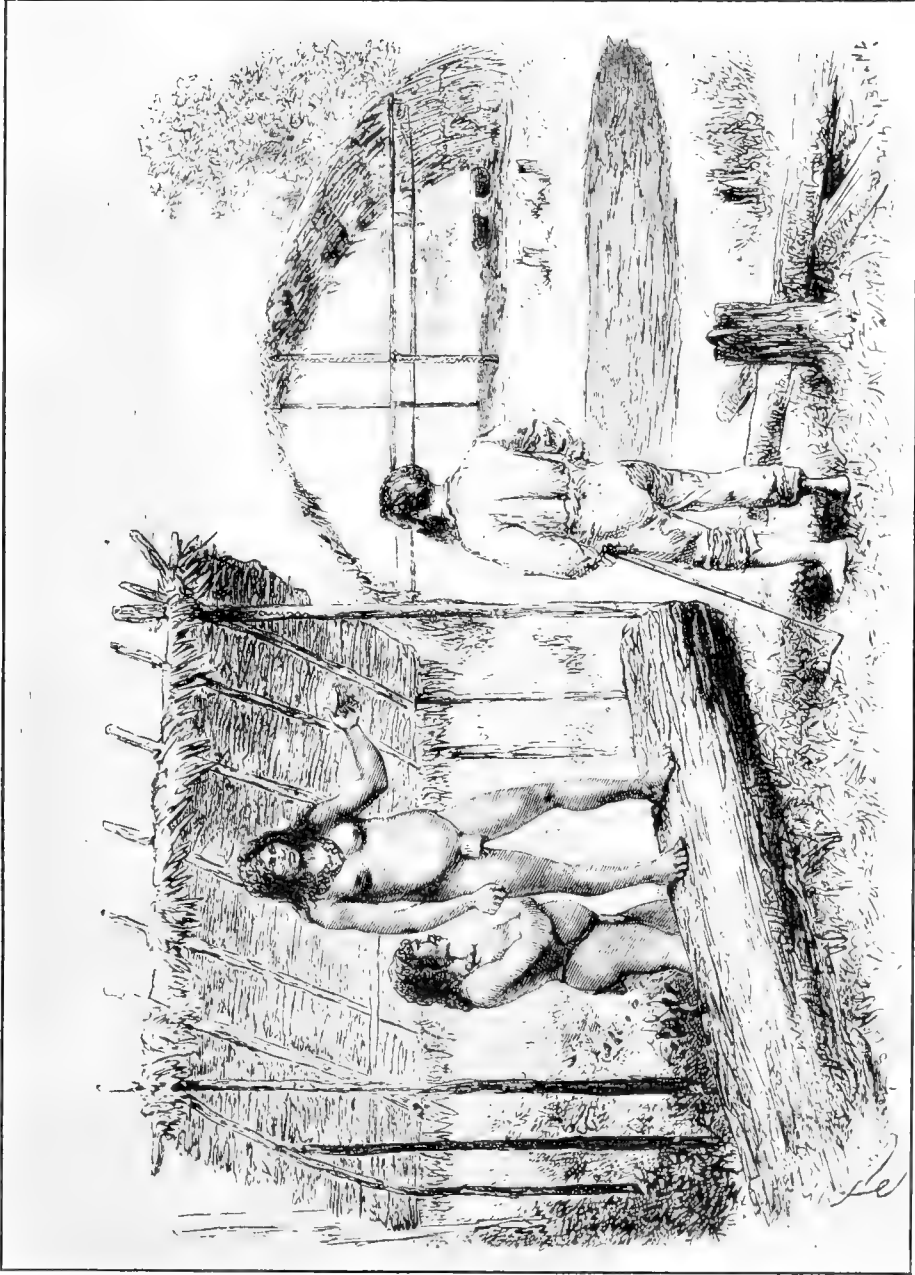
FIG. 69.—Simpler form of triangular banab.

level. By this means the rain will have a better chance of running off the leaves with which the scaffolding will be subsequently covered.

There is a simpler design for this triangular form of banab adopted not only by Patamona but also by Makusi and Wapishana, where the intricacies of the gable end are all

done away with, and we have the two uprights held together with a crosspiece, upon which the two horizontal sidepieces rest (fig. 69). These are similarly tied on the slope to a third post, and crosspieces attached to them from above. On the first occasion that I saw two such triangular banabs attached to the one tree I could scarcely dispel the idea which immediately arose that possibly some such arrangement of two or three similar structures arranged round the one central post might have given rise to the conception of the circular houses met with among these people. Subsequent investigation, however, has made me think differently.

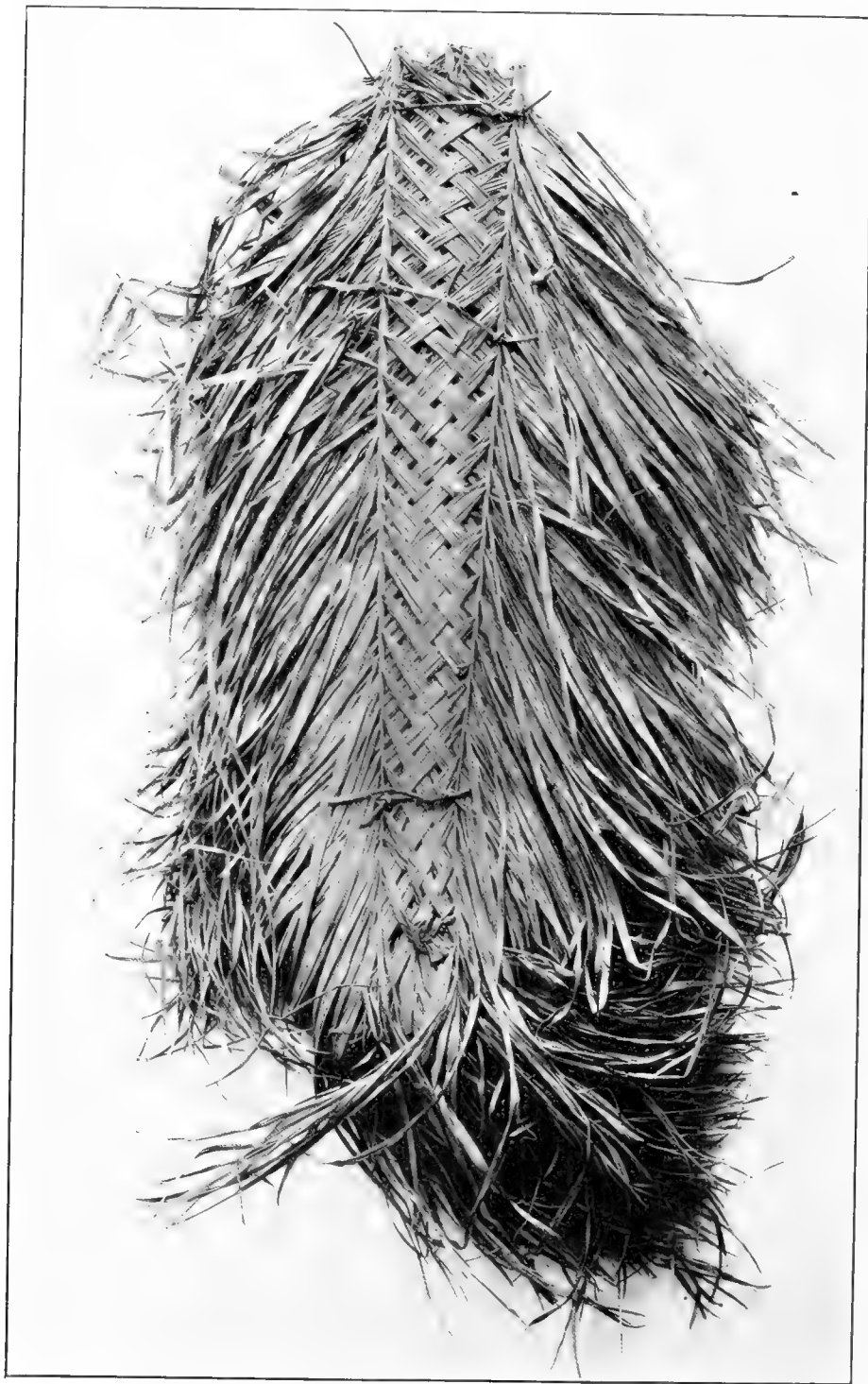
295. A banab, in the shape of a lean-to, is of very common occurrence. In its simplest form this may be composed of two uprights (posts, saplings in situ, etc.), joined by a crosspiece from 4 to 5 feet off the ground, against which any large leaves (e. g., truli, kokerit) are pressed, with their stalks stuck into the ground. On the other hand, the same shape of banab may be built with a similar scaffolding (pl. 54) as its permanent prototype (sec. 298), though in miniature.



A

B

A TEMPORARY LEAN-TO SHELTER (A) AND A PERMANENT ARCHED HOUSE (B), CAYENNE. (After Crévaux.)



RAIN SHELTER MADE OF PLAITED MANICOL LEAF

But the framework of sticks may be done away with in its entirety if it is to afford shelter from rain only for an hour or two, when the banab consists only of a few leaves of some palm, laid flat one upon the other, and the stalks, which are bound together, stuck into the ground at such an angle that the natural curve of the leaf affords some shelter (IT, 208).

296. A portion of truli or other similarly large leaf affords a portable rain shelter, which is discarded after use. There are, however, certain specially plaited ones of the Arawak, Carib, and Warrau made from manicol leaf that are brought into requisition time after time (pl. 55). They may be balanced on the head, or, if the wind be fairly strong, held in position with a hand. They may occasionally be used as a sail on a corial (sec. 797).

297. There are certain outhouses which, in a sense, combine more or less the order of structure of the banab with that of the permanent house. These may be either the kitchen, the sleeping quarters of one or both sexes, the stranger's house, or the women's retiring quarters during menstruation or confinement. The last mentioned, to be seen among the Warrau, certain of the older Moruca River Arawak, etc., may be distinguished by having tied onto them, in some conspicuous place, often the corners, some bundles of spent ite—i. e., the young leaf after removal of the outer cortex for fiber making.

298. A convenient method of classification for permanent huts and houses is according to their methods of construction, whether in the form of a lean-to, an arched roof, a circular elliptical or rectangular ground-plan, and if built on posts or piles. Crévaux says of the Trio on the upper Parou, Cayenne, that their houses are less complete than those of the Oyampi and Ouayana. Not only have they no floor, but some of them are only covered on one side. They are simple shelters, not at all more complete than the ajoupas (banabs), which one constructs when traveling (Cr, 276). In fact, an interesting comparison can be made between this structure and the permanent lean-to of the Makusi and Patamona, one of which I came across (fig. 70) measuring some 16 or 17 feet in height. It was capable of easily accommodating half a dozen people, and had been thatched with ite leaf. The fixation of all the different parts had been effected with vine rope.

299. On the Cuyuni the Carib and Arawak huts were alike (ScG, 226). The houses of the Carib, says Hillhouse (on the upper Essequibo and Cuyuni), are constructed of two rows of elastic rods, about 20 feet long, stuck firmly into the ground and bent over at the top in the shape of a pointed arch. The base is about 20 feet and the whole is covered with the leaves of the palm laid horizontally from bottom to top

(HiC, 237). Schomburgk met with Carib arched houses at Annai village, on the Rupununi (pl. 58 B). So also Melville, for 30 years resident on the upper Rupununi, tells me that he has often seen the vaulted houses, as described by Hilhouse, built by both Makusi and Wapishana Indians alike. They were invariably covered with durubanna leaves, very like, if not identical with, the dallibanna of the coast, and were similarly strung on long, light laths (sec. 321). None of the other palm leaves would be suitable for this kind of house, as their weight would be too much for the frame. Once on the laths they were attached to the frame from below up in horizontal rows, to form a neat waterproof and exceedingly light combined wall and roof.

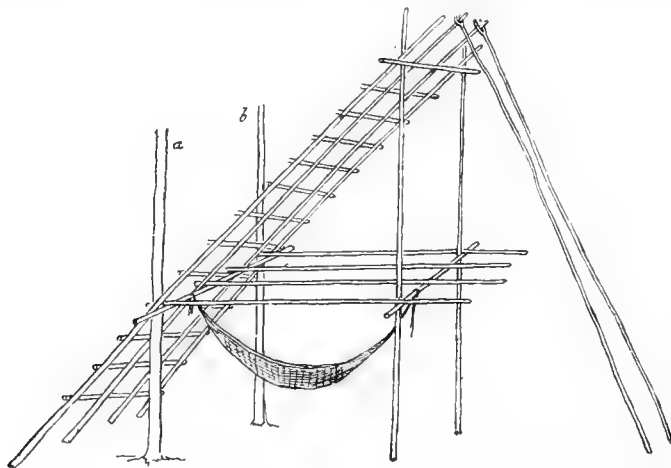


FIG. 70.—Frame of permanent house, lean-to type. It has been built up against two saplings (*a*, *b*).

These houses would also be always built in the forest, as such light leaves would be blown up by the strong winds over the open country. On an island in the Essequibo opposite Maccari Mountain there were once five houses, all of this kind; the largest of them was quite 30 feet wide and 30 feet high at the apex, and certainly 40 feet long (MEL). In our own colony they are still to be seen among the Taruma (JO), but otherwise they are very scarce. I noted a Carib one recently on the upper Barima (fig. 71), thatched with manicol and dallibanna, and the sides closed with pump-wood bark. As these structures are fairly common in Surinam (pl. 58 B) and Cayenne (pl. 54) they must have been of wide distribution.

300. The circular house, the bell tent, beehive, or hayrick, as it is sometimes called, is of extremely wide distribution, and, as I propose showing, certain types of it may have intimate structural relations with some of the rectangular houses. Not only is it seen regularly among Wapishana, Makusi (pl. 59 A, B), Arekuna, and

Patamona, but occasionally among Arawak, Akawai, and Roucouyenne. At an Arawak village on the Corentyn River St. Clair observed that the chief's hut was unlike that of the others, it being of the shape of a beehive, and beautifully thatched down to the ground with the leaves of the manicol palm. Its entrance was by a small, low door (StC, 1, 304). There is Hilhouse's and other authority for the statement that the Akawai built both square and circular houses (HiC, 237): these are called weemuh (BCL, 145). Up to within five years ago there was an Akawai circular house on the little Winiperu, a branch of the Demerara River. The Roucouyenne, beyond the Tumuc-Humac Mountains, have two houses—one for day, the other for night use. The latter, distant from the settlement, is made in the shape of a hayrick and closed with a woven palm-leaf door for protection from mosquitoes, and smoked fires are kept in it (Cr. 100). Unfortunately, I have had no opportunity of examining

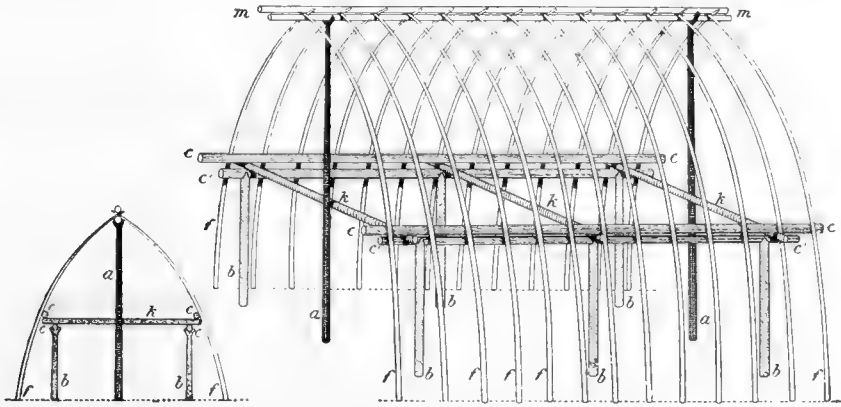


FIG. 71.—Frame of permanent house, arched type. Carib, Upper Barima River. *a*, Main post; *b*, side framing posts; *c*, runner; *c'*, wall plate; *f*, rafter; *k*, tiebeam; *m*, ridge-pole.

on the spot, or on a good plan, the order of structure of the Oyana (Roucouyenne) circular hut (GOE, pl. ix, fig. 1), which certainly differs from the typical Makusi one.

301. The typical circular house met with in the country of the Wapishana, Makusi, Patamona, Arekuna (Taurepang), etc., is built as follows: The main (central) post (*a*) is first inserted (pl. 56 A), and a long wooden pole is used to measure from it the exact spots where the side framing-posts (*bb*) are to be placed. These are fixed at equal distances from the center post and from one another. The circular wall plate (*c*) of wattle, vine rope, etc., is now made on the ground, and, raised to the tops of the side framing posts, notched on their outsides to receive it, is tied there with vine rope (B). This is next supported by an extra and thinner intermediate post (*dd*), situated halfway between each framing post, except in front (and back),

where two are attached to form the framework of the door or doors. The main post is next climbed by tying rungs across it, one above the other, and the "crosstree" lashed on at the top (C). The crosstree consists of two equally long pairs of sticks (*e*), tied at right angles, one pair being in the same vertical plane as the two intermediate framing (door) posts. That portion of the main post above the crosstree will, on completion of the thatching, remain exposed. Four pairs of rafters (*f*) are next placed in position (D) with their thicker ends tied to the wall plate below, two of the pairs in close proximity to the intermediate framing (door) posts, the other two

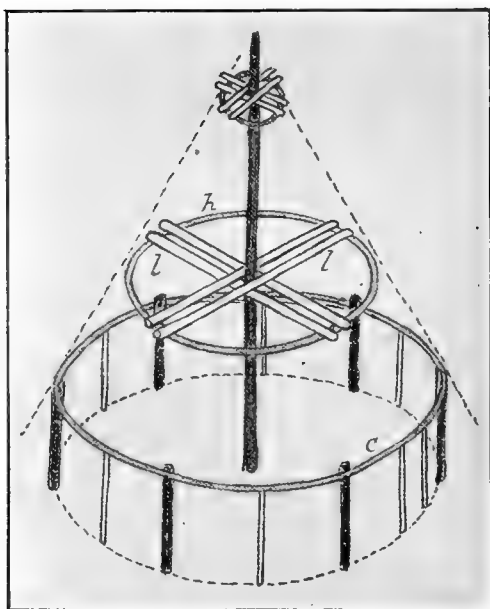
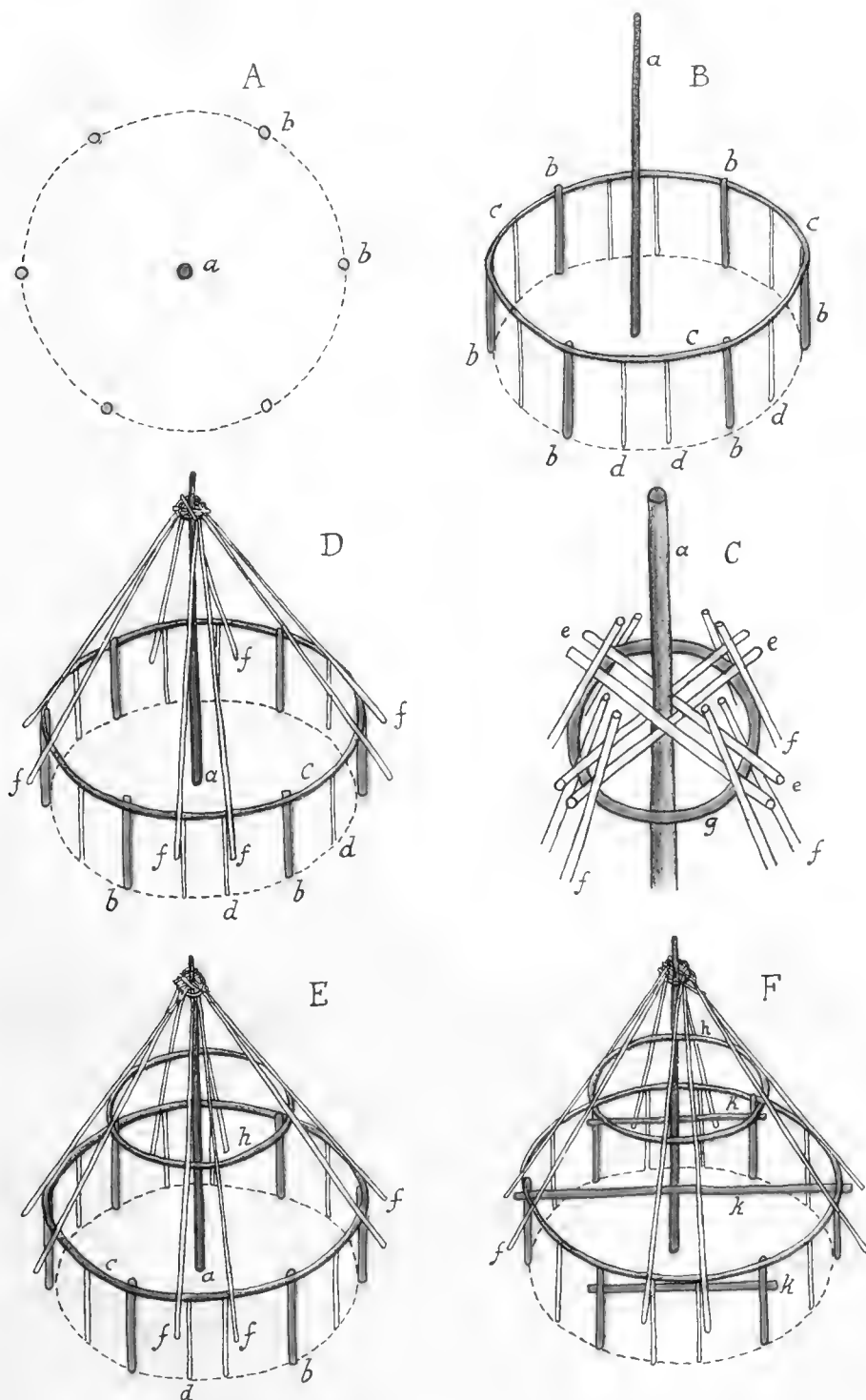


FIG. 72.—Circular house; construction of framework, showing the collar ties (*l, l*) of the intermediate purlin (*h*).

upon the circumference of the wall plate upon either side of the central framing posts. The result of this arrangement is that the thinner tapering extremities of the rafters can be conveniently tied to the outsides of each corresponding pair of cross-sticks, their fixation being further strengthened with a purlin (*g*). A second purlin (*h*), likewise made on the ground, is hauled up and attached (E) to the rafters about halfway between crosstree and wall plate. The remaining rafters are next put in place; and finally (F) the tiebeams (*k*) and collar ties (fig. 72 *l, l*). The walls and door are put in subsequently. The largest house of this description that I saw was at the Makusi village of Maripai, the ground measurement of which was 50 feet, the height between 65 and 70 feet. This unusual size had been obtained by lengthening the side framing posts, thus raising the level of the wall plate to about 15 or 16 feet from the ground. Instead of an intermediate purlin about halfway between the crosstree and the wall plate, there may be two intermediate ones. The collar ties that go to strengthen the purlin may be composed either of two pairs of sticks placed at right angles (fig. 72 *l, l*), i. e., of similar construction to the crosstree, or of three sticks attached at right angles to a fourth. Curiously enough, in all the tribes above



CIRCULAR HOUSE: CONSTRUCTION OF THE FRAMEWORK

A, Situation of main central (*a*), and six side-framing posts (*b*).

B, The wall-plate (*c*) is fixed in position, and supported with intermediate framing posts (*d*).

C, The cross-tree formed of four sticks (*e*), to which the first four pairs of rafters (*f*) are attached, strengthened by a purlin (*g*).

E, Shows the intermediate purlin (*h*).

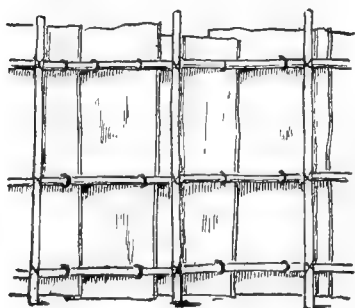
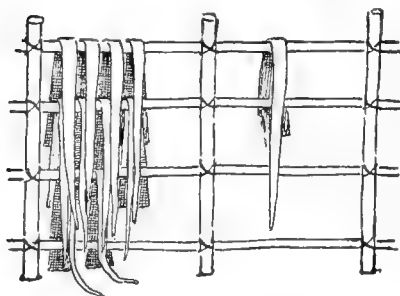
F, The tie-beams (*k*), and remaining rafters are put in place.

mentioned, the collar tie is spoken of by a term indicating "monkey-bench." It is the perch proper for this domestic pet. The rafters, with their thicker ends downward, project anywhere from 4 to 6 feet beyond the wall plate to a height sometimes as low as 3 feet from the ground, the side walls never being on the same vertical plane as the wall plate, but beyond it. Indeed, these latter are built on a framework of light sticks (side-wall posts), stuck into the ground and tied above to the rafters outside of their attachment to the wall plate. The center of the central tie beam is bound very firmly to the main central post. In the round houses of the Trio of Surinam the central post very frequently projects a bit beyond the roof, and upon this projecting portion is placed an earthen pot (GO, 3). These pots are also to be seen on Taruma, Waiwai, and Parakuta houses, and either rest upon or are pierced by the pole down which they are believed to prevent the rain trickling (JO). On the Maopityan circular houses there was a double bell-top roof; to the upper and smaller one were attached certain wooden figures that swayed with the wind (SR, II, 471). Certain split timbers, wattles, etc., are generally laid across adjoining tiebeams to form a staging on which to store provisions, weapons, etc., and not infrequently, as in Makusi houses, may give rise to a complete flooring on which the occupants reside, while visitors, etc., are accommodated on the ground floor. It can hardly, however, be described as a two-story house, or as a pile dwelling (sec. 314).

302. The walls of these circular houses, like those of elliptical houses, are occasionally left unclosed (pl. 59 A). Otherwise they may be built of leaves, pump wood, bark (pl. 59 B; fig. 73 B), or mud; and from the fact that all such variations may be met with in the same tribe and district (e. g., Makusi on Rupununi River), it seems probable that the differences in material are dependent on local or climatic conditions.

Having fixed certain slender outer and side wall posts into position by tying them to the rafter ends above and jamming them into the ground below, the interspaces are filled with kokerit, lu (a palm very like turu), or manicol leaves. The first mentioned is folded in its length, and attached horizontally, the midrib acting as a runner which is tied onto the posts (Makusi, Wapishana). The lu is employed (Makusi) in similar fashion, save that the leaf is split and put on in pairs like the turu for thatch (sec. 324). The manicol, after splitting, is woven into long frames, which are set up vertically, one overlapping the other. Or, again, the outer side wall posts may be joined up with runners, upon which wild agave leaves (fig. 73 A) are made to rest by their own weight (Makusi), or else bark sheets (B) of the pump wood (baramalli) may be tied onto them (Makusi).

These bark sheets are as much as 5 feet in height. Finally, as is very commonly the case in the cold open savannas and on the mountains (Makusi, Patamona, Taurepang, etc.), the interspaces between the wall posts can be inclosed with a double latticework of vertical and horizontal rods, so as to form squares from 5 to 6 inches across (pls. 60 A, B; 76). These squares are then filled in with mud, but no admixture of grass, which subsequently hardens. In Schomburgk's time the Wapishana houses, unlike those of the Makusi, had no walls (ScO, 84); but this statement does not hold good for the present day.



B

FIG. 73.—Walls of circular and elliptical houses. A, Wild agave leaves; B, bark.

303. In the smaller houses there is usually but one door, a very low and narrow one; in the larger there are often two, placed opposite each other, the front one in such cases being reserved for the men. In the latter circumstances the two halves of the interior are roughly divided for the use of the sexes, but, as in other houses, the building may be occupied by several families, each having its own hearth. The door is made either of plaited leaf (manicol, kokerit), of ite-leaf stalks fixed vertically by rods piercing them above and below, of bark sheets, or of deerskin. It is removed bodily to one side during the daytime.

304. Certain structural variations in these circular houses are observable among the Arekuna (Taurepang). There may be (pl. 57, fig. 1 B) two forked main posts (*a, a*) supporting a miniature ridgepole (*m*) situated in the shorter axis of the building, which has become slightly elliptical. The first structure of this nature that I saw was the house of Jesus, a Taurepang, about 10 miles southwest of Mount Roraima, and called from me the remark that the method of construction was a freak on the part of the occupant. The latter and my own Indians informed me, however, that the shape was not uncommon—that of the sawari seed (*Pekea tuberculosa*), the name that is applied to this type of building. The shorter and longer dimensions of the particular house in question were 34 and 38 feet, respectively.

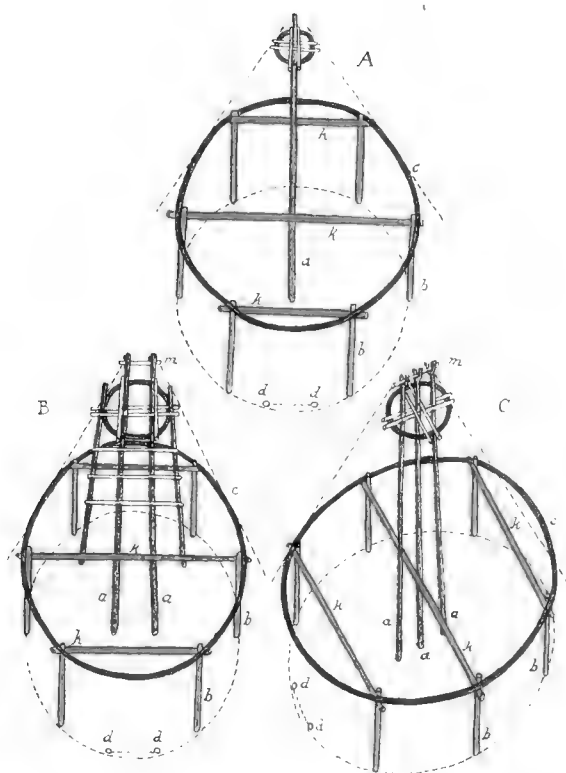


FIG. 1. *A*, Normal. *B*, Two forked main posts (*a, a*) in shorter axis of building which has become slightly elliptical. *C*, Three forked main posts in longer axis of building which has become slightly elliptical.

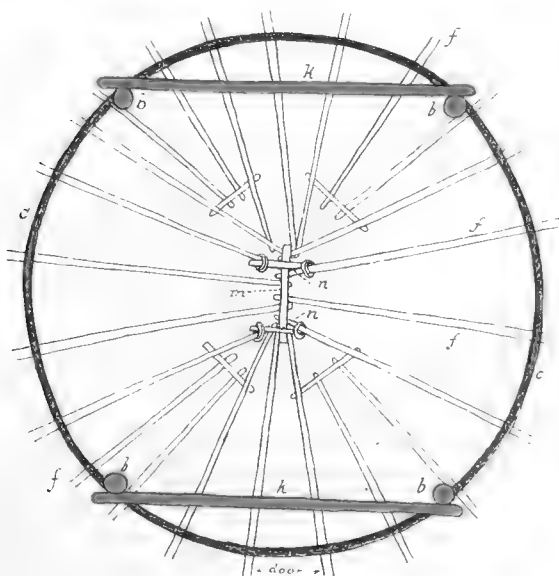


FIG. 2. Viewed from below. The main posts are dispensed with altogether, as also are two of the main framing posts.

VARIATIONS IN CIRCULAR TYPE OF HOUSE AMONG THE TAUREPANG (AREKUNA)

305. Another variation (pl. 57, fig. 1 C) is the presence of three main posts (*aaa*) fixed close together in the same plane, supporting at their forked extremities a ridgepole (*m*), with a corresponding alteration in the shape of the building from a circle to a slight ellipse, the wall plate and purlin becoming proportionately modified. The longer pair of sticks composing the crosstree incloses the three main posts and lies in the longer axis of the structure. The middle main post is finally supported by attachment to the center of the middle tiebeam. Certain of the rafters, in addition to being tied to the crosstree and corresponding purlin, rest on or are otherwise kept in position on the ridgepole. This type of building bears interesting comparison with the long elliptical structures of the Makusi, etc.

306. The most interesting variation of all, however (pl. 57, fig. 2), was seen in a very small Taurepang house (about 15 feet in diameter) on the "short cut" between Mount Roraima and Kuatin Creek, not very far from the latter. Here there were but two pairs of side framing posts and no center post, crosstree, or purlin. The place of the crosstree, etc., was taken by a miniature ridgepole (*m*), both ridgepole and rafters being supported by two wooden rods or braces (*n*) tied crosswise beneath them. The use of braces is not unknown in other varieties of comparatively modern Indian houses (sec. 310). The occupants of the building—the only one of its kind that I saw—being away at the time of my visit, I was, unfortunately, prevented gleaning

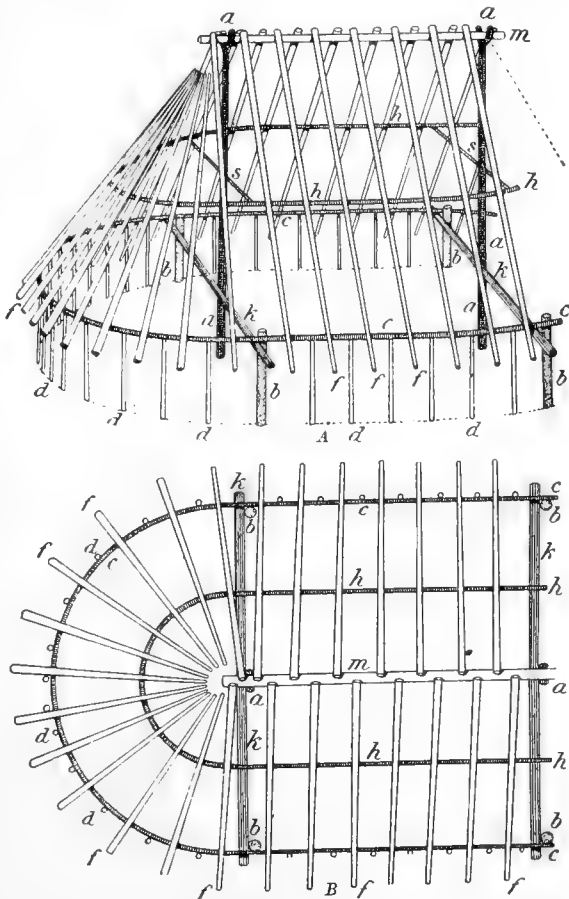


FIG. 74.—Permanent house, elliptical type, with two posts. Construction of framework. Reference letters as in preceding figures; *ss* are the collar ties.

any particulars as to the *raison d'être* of a type of construction so radically different from anything to be met with elsewhere in the district.

307. The strictly elliptical house of the Wapishana, Makusi, Patamona, and Arekuna (pl. 60 A, B) is but a development of the circular one met with among these same people, notably of the second variation of it seen in the Arekuna country (pl. 57, fig. 1 C). The ridgepole is increased in length and the three main posts, together with tiebeams, etc., become separated, while the purlin, halfway between ridgepole and wall plate, is strengthened with three ties or stays in place of crosstrees, one for each post. In the smaller of these elliptical houses, the central post, together with its tiebeam, disappears (fig. 74). It is to be noted, further, in this type of habitation, that while the rafters at the two rounded gable ends have their thicker ends down, those resting along either side of the ridgepole have theirs up. In many of these elliptical buildings one or both gables may be straight (vertical) instead of rounded. This is usually but a temporary expedient adopted to save time and labor during the course of construction, e. g., the advent of the wet season being earlier than expected, but occasionally the building may be left in such a condition permanently, although among the particular tribes mentioned above it is not considered orthodox. Usually there is a door at either end for the use of the two sexes respectively.

308. Indians have names for all the different main parts of the house, but do not appear to possess any for "roof" and "wall" as distinct from the house itself.

NAMES OF THE PARTS OF A HOUSE

English.	Makusi.	Patamona.	Arekuna (Taurepang).	Wapishana.
Ridgepole.	nekatáuru.	ipu-yapong.	waipabu.	bakurida.
Main post.	yanrakin.	ipu-yaino.		sakurai.
Rafter.	yára.	yarai-i.	yára.	uradurr.
Wall plate.	yawokoi.	yawokoi.	yawokoi.	ekuan-pirr.
Purlin.	tewang-yessi.	yawokoi.	yawokoi.	yaradurr dikil-kinya.
Collar tie.	iwaka-murcí (=monkey bench).	iwaka-murei.	iwaka-murei.	iwaka-tipiri.
Side-wall post and Side-framing post.	au-ute-pìchi (=house foot).	yapapoino.	essemóna.	ikidep (=but-tocks).
Tiebeam.	pakurna.		yaporkaino.	
Door.	sapi, monata.	monata.	monatá.	tawudai.
Round house.	tukutchpang.	tukutchpang.	tapui.	tukutchpang.
Elliptical house.	parakapang.	pakarabang.	parabang.	kaban-kaudina.



1. Carib village of Annai, Rupununi River, showing the arched or vaulted type of house. From Schomburgk's "Twelve Views in the Interior of Guiana," London, 1841. The village still exists, but it is now Makusi, and this particular kind of habitation has disappeared.



B. Arched house. (After Joest.)

HOUSES WITH ARCHED OR VAULTED ROOFS



A, Circular house without side walls, Makusi, Rupununi River.



B, Circular houses with side walls, at Inongkong, a Makusi village at the back of Toka, Rupununi River.

CIRCULAR HOUSES

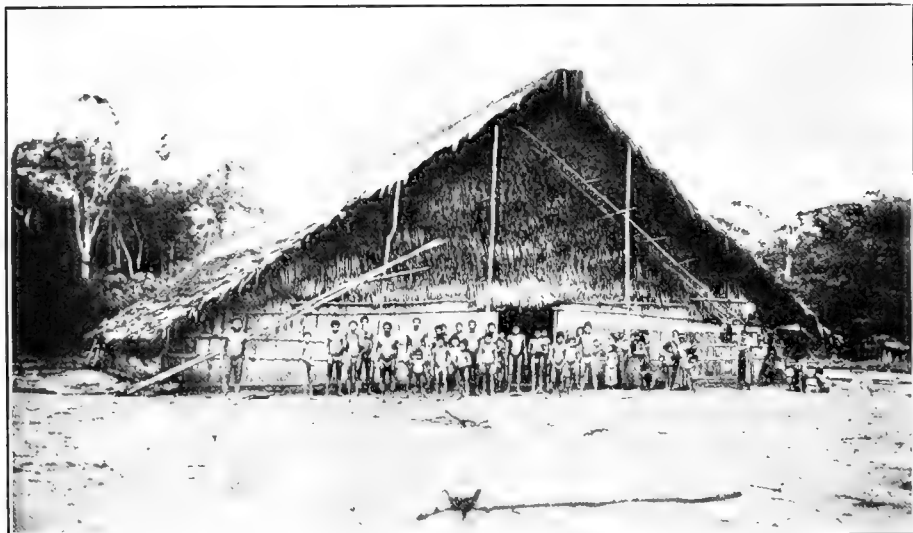


A

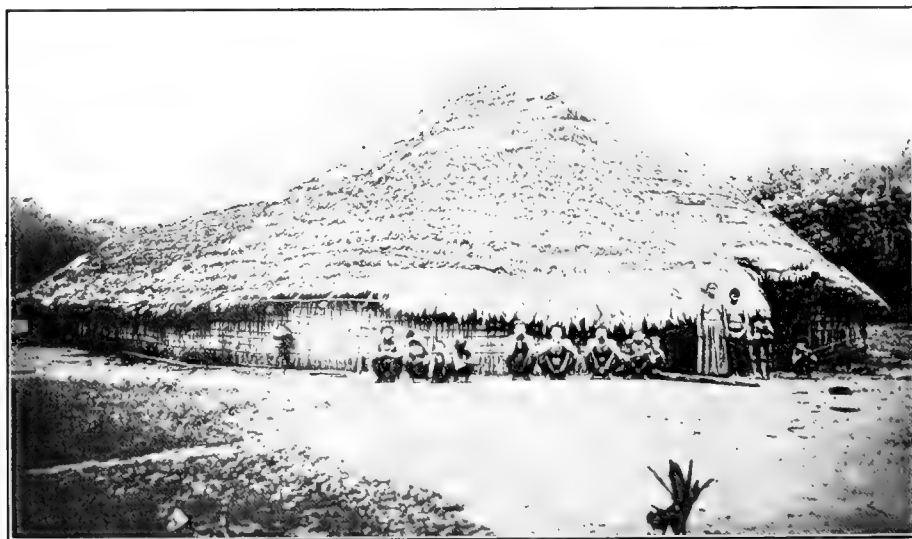


B

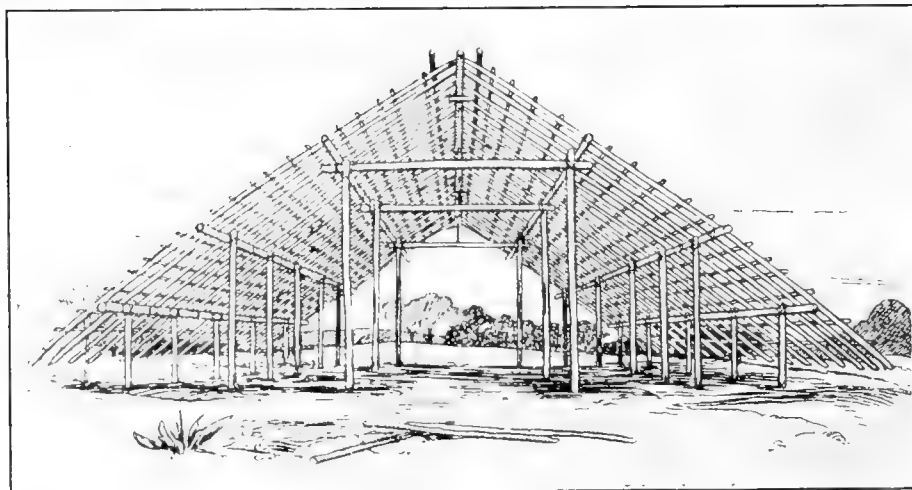
ELLIPTICAL HOUSES WITH MUD WALLS AT ANNAI VILLAGE
(MAKUSI), RUPUNUNI RIVER



A



B



C

VARIATIONS IN ELLIPTICAL HOUSES

A, B, Front and back views of a Tuyuka (Betoya) maloka on the Tique, upper Uaupes River district. (After Koch-Grünberg.) C, Framework of a Siusi (Arawak) maloka on the Aiary, upper Uaupes River district. (After Koch-Grünberg.)

309. But orthodox or not, the shape referred to in section 307 is one that was constant in the Uaupes River district in Wallace's day. All the tribes on the Uaupes construct their dwellings after one plan which is peculiar to them. Their houses (*maloka*) are the abode of numerous families, sometimes of a whole tribe. The plan is a parallelogram with a semicircle at one end—the back (pl. 61 A, B). The dimensions of one at Juarite were 115 feet in length by 75 feet broad and about 30 feet high. This house would hold about a dozen families, comprising nearly 100 individuals. In times of feasts and dances 300 or 400 are accommodated in them. On the sides are little partitions of palm leaf thatch dividing off rooms for the separate families. Roof and sides of thatch. . . At the gable end is a large doorway, 6 feet wide and 8 or 10 feet high. The door is a large palm mat, hung from the top, supported by a pole during the day, and which is let down at night. . . At the semicircular end is a smaller door, which is the private entrance of the *tushaúa*, or chief, to whom this part of the house exclusively belongs (ARW, 341).

310. In the course of half a century, however, the ground plan would seem to have been gradually altered, the rounded end being replaced by one similar to that in front, so that the ground plan has become rectangular (pl. 61 C). The construction of such a "common house," or *maloka*, is the same, whether it be large or small. Three frames, each formed of two posts joined at their upper ends by a crosspiece (tiebeam), help to support the gradually sloping roof, while from the middle of each tiebeam there proceeds a vertical one, with a forked extremity that supports the ridgepole, which, in addition, is propped up with a few, usually four, horizontal braces. (Braces have already been referred to in other Indian houses (sec. 306).) These frames are situated at right angles to the length of the building, so as to form a free alleyway beneath them, while on their outer sides run two rows of five or six smaller posts fixed close to the very low side walls. Horizontal beams (runners) running the length of the roof join the elbows of the three frames and the tops of the four rows of smaller posts. It is to these runners that the rafters are attached. The roof projects well over the front as a sure protection from the rain (KG, I, 71). It will be observed that in addition to its proper function as a point of attachment for the rafters the runner also acts as a wall plate.

311. A similar method of construction with frames (i. e., two side posts connected with a tiebeam) is to be seen in the rectangular houses of the Arawak (fig. 75), Warrau, and coastal Carib of Demerara. On account, however, of the differentiation here of runner from wall plate, now distinct and separate, the tiebeam, which

supports the runner, is connected with the side framing posts only indirectly through the wall plates. In the ordinary size houses (pl. 62 A, B) there would be two main posts, one at either end of

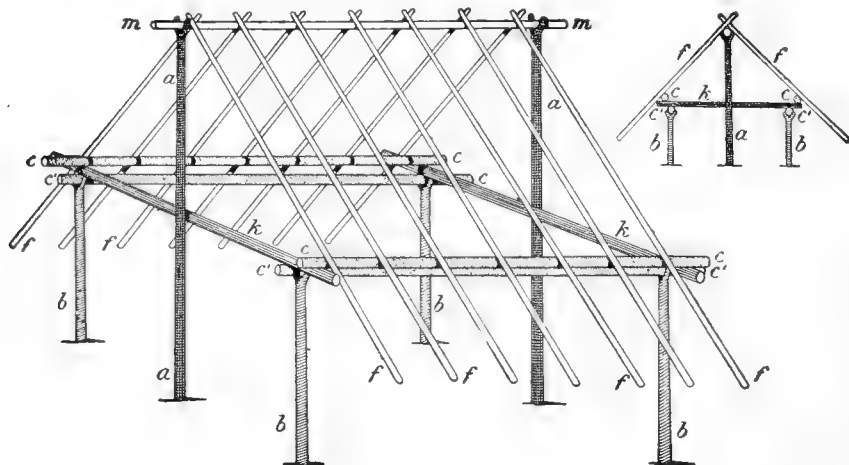


FIG. 75.—Permanent house. Rectangular two post. Construction of frame. Reference letters the same as in figure 71.

the building, supporting the ridgepole with their forked extremities, but in the larger ones, those with a length markedly greater than their width, there may be a third one halfway between the other two.

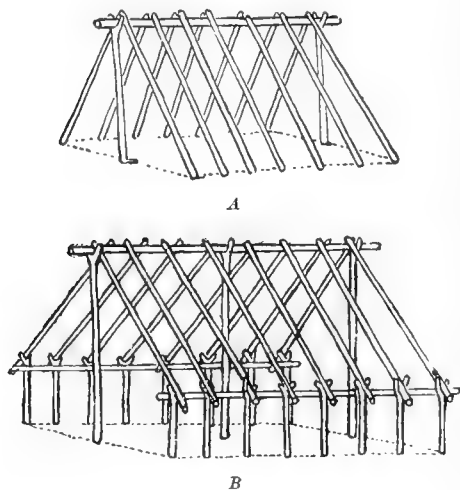


FIG. 76.—Framework of the koubouya (A) and tabouil (B) house. Cayenne.

The rafters project to such a length beyond the wall plate that when thatched they almost touch the ground. The ends of these buildings are left open like the sides. To cover them in at all with truli or other leaves, etc., as I have sometimes noticed, is said to be all "modern fashion."

312. The rectangular huts (karbets) of the Galibi (Carib) in Cayenne would appear to have been built on a primitive plan peculiarly their own. They were known as koubouya or low houses (fig. 76 A) built on the

ground to distinguish them from the sura (sec. 316) or high houses (pl. 63 A), the one-story buildings. They were constructed of two posts, carrying a big (ridge) pole (fig. 76 A), that supported the entire structure. Against this pole were laid saplings

on both sides, the whole being covered with ahouai leaves. People entered by a small opening in one of the sides (PBA, 141-142), which makes one incline to the belief that the ends were closed. The size of the dwelling was dependent upon the number of people occupying it. There were some that held from 20 to 30 households. Increased height and width of building is obtained by raising the lower ends of the rafters on forked sticks, as in their large meeting house or taboüi (pl. 63 A; fig. 76 B), the common meeting place of members of the same nation, where they receive strangers, bury their dead, and hold their solemn festivals, or rather debauches. It is a kind of small hall, 50 or 60 feet long and 10 or 15 feet wide. Huge forked posts are fixed at the center and at the ends, which support the big pieces of timber for ridging. Rafters are then put in position on either side, these being supported below on smaller forked posts, about 4 or 5 feet high, spaced along the whole length of the structure; the wall plates or runners are tied to the inner sides of these posts, the roof being of the same materials as that of the other houses. The two ends, which serve as entrances, are always open (PBA, 145-146).

313. The following table supplies the Warrau, Arawak, and Carib terms for the different parts of a rectangular house:

English.	Warrau.	Arawak.	Carib.
Ridgepole.	akwa-eku.	ti shi-do.	detano.
Main post.	hano-aróko.	bahuta-bara.	jéturu, déturu.
Rafter.	eburu.	baudura.	iaráru.
Wall plate.	ahoto-ekuhu.	bahu-uinádito.	appo-pono.
Runner.			
Tiebeam.	are maka.	bai-ura.	surapang.
Wall post.	kanokwa-amuna.	bahuse.	wakábu.
Rods (thatch).	hanoko-abamahu.	timidi-kusakwanna.	iararu.

314. The way in which certain habitations have been grouped together as pile dwellings is extremely unsatisfactory, but in the absence of accurate and detailed descriptions of the methods of construction, better can not be done. As the group now stands, houses on piles or posts are neither peculiar to one particular tribe nor to the swampy coastland, but may be observed among many tribes far inland, in country both high and dry. At the same time ordinary (circular, oval, or rectangular) houses with a flooring constructed on the tiebeams joining the side framing posts and the consequent disuse of the ground surface by the occupants must not

be regarded as houses built on piles or posts—an error into which it would appear that more than one traveler has fallen.

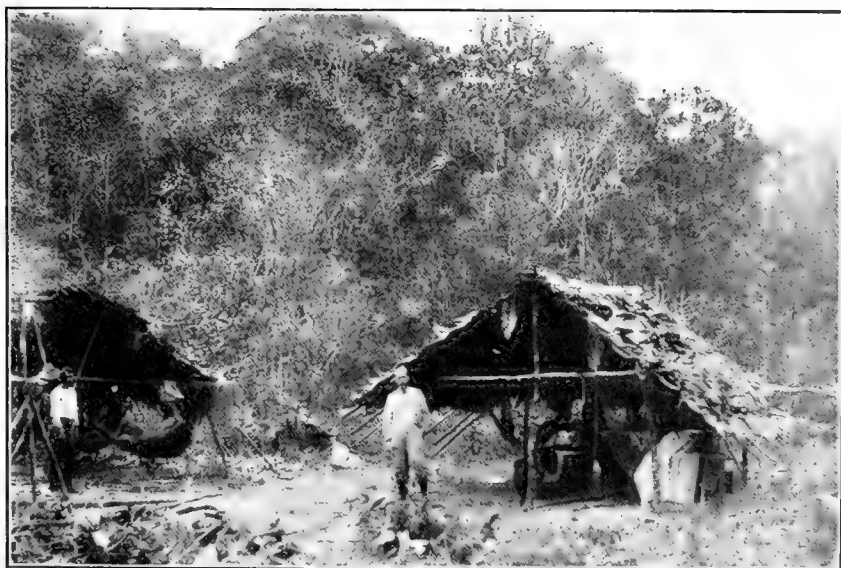
315. In connection with the alleged old-time pile dwellings of the Warrau, over water, in the coastal swamp lands, Hilhouse says: "The mauritia (ite) grows in clusters as thick as trees can grow. The Warrau selects one of these groves and fells the trees about 4 feet from the surface, and on their stumps he lays a floor of their split trunks. The trulis (manicaria) are generally adjacent for the roof, but if not the ite leaf serves. Lumps of clay are laid on the floor, on which fires are made . . .; but the habitation is an irregular hut, raised on a platform just above the level of the water, which in these regions is 3 feet above the earth for three-fourths of the year. Some of them can contain 150 people" (HiB, 327).

Schomburgk makes mention of a Warrau settlement on the Barima with miserable huts 7 or 8 feet long (SR, I, 195). On the Orinoco, Gumilla speaks of the Warrau who raise their houses, streets, and market place (plaza) upon stakes and poles sunk through the mud until their ends reach firm ground. To these stakes, which are necessarily of such a length that neither the tides nor swell of the Orinoco cover them, are fixed and fastened the requisite timbers. On the transoms and woodwork stretching from one pole to another is laid the flooring, formed of the hard trunk or outsides of the murichi palm (mauritia), the name which they give it in their language . . . They thatch the houses with the leaves of the same palm (G, I, 145). According to an illustration given by Crévaux, the floor would appear to consist of two layers of tree trunks, at right angles to one another, the components of the lower one spaced; those of the upper touching (Cr, 607).

316. Coming now to houses on posts in lands high and dry, there is Barrère's incomplete description left to us of the Sura (sec. 312) of the old-time Cayenne Galibi. This is nothing but a number of posts, fixed in the ground, about 8 or 10 feet high, on the top of which is constructed a flooring of timbers split from the trunk of the ouassie (manicol) palm, and tied crosswise to form a firm flooring. The roof is of the same leaves as the koubouya (sec. 312), i. e., truli, but, unfortunately, no account is given of the structure of the wall plate, etc., or the manner in which the roof, ridgepole, and rafters are supported. To get inside one has to climb saplings, inclined at not very much of a slope, on which are the notches to which the rungs are affixed, but so insecurely that they lean now to this side, now to that (PBA, 142-143). My own opinion of these Sura houses of Cayenne—and we meet with similar ones in Surinam (GOE, pl. XII, 2)—is that they are identical with the rectangular buildings of the Arawak, Warrau, and coastal Carib described in section 311, save that flooring has been laid across

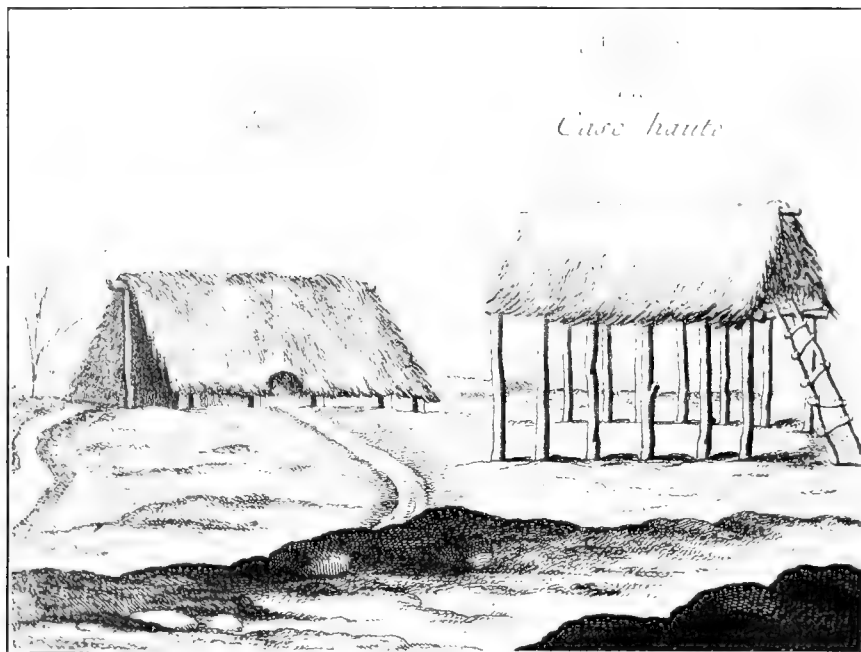


A, Warrau house on itabo between Moruca and Pomeroon Rivers. (Photograph by Sir C. Rayner.)



B, Small rectangular house. (Photograph by H. I. Perkins.)

RECTANGULAR HOUSES



A, Old-time houses in Cayenne. [Note. In the Sura habitation the artist has evidently forgotten the two main posts supporting the ridging; otherwise it would be similar to the present day house of the Carib stock Indians of Cayenne and Surinam. (Compare GOE, pl. xii, fig. 2.)]



B, An unusual form of dwelling, at the Makusi village of Inongkong, at the back of Toka, Rupununi River.

VARIATIONS IN RECTANGULAR HOUSES

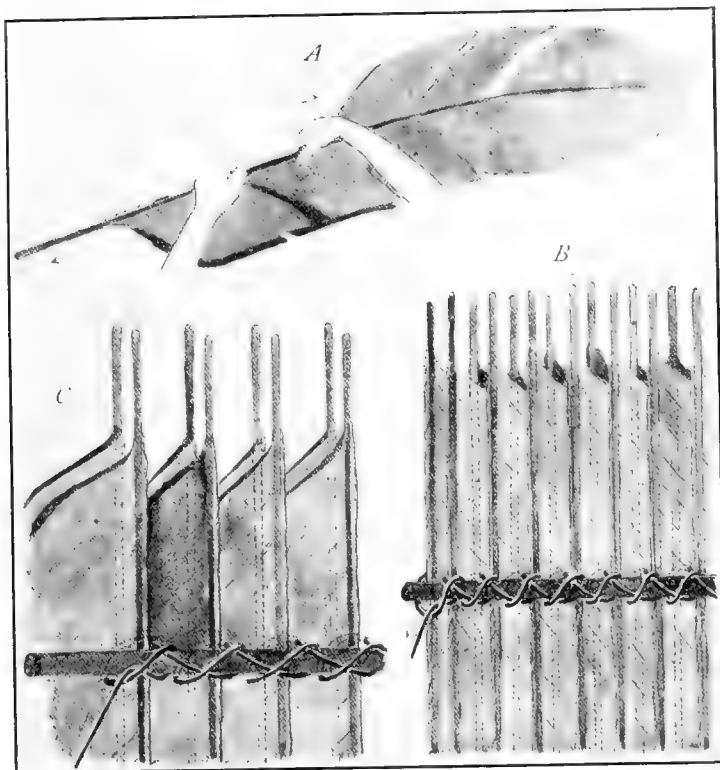
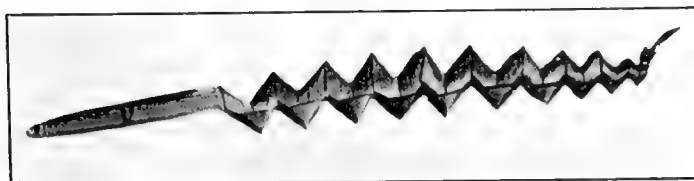
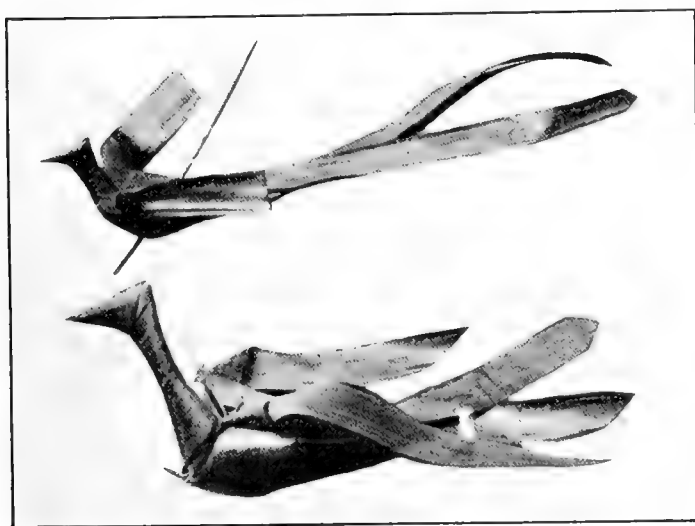
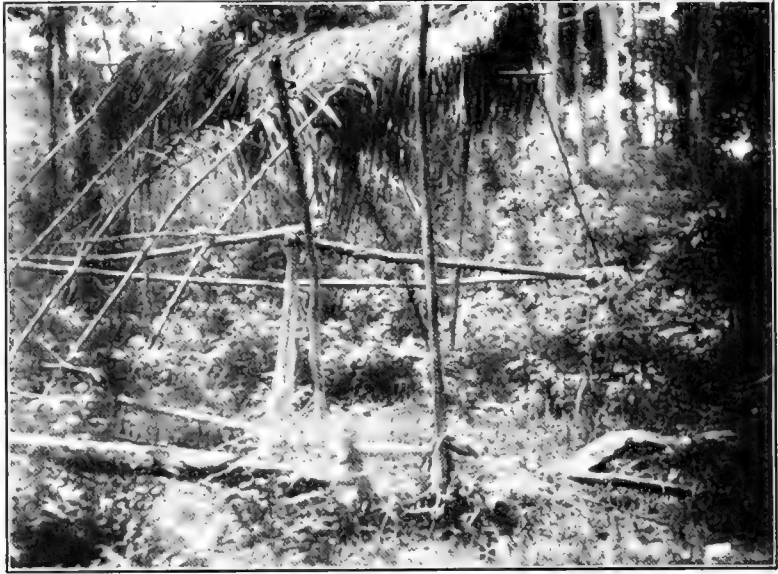


FIG. 1.—The truli leaf as thatch. *A*, Making a right-hand truli. *B*, Roof thatch, inner surface; one midrib looped up at a time. *C*, Partition, wall, inner surface; two midribs caught in each loop.



FIGS. 2 and 3.—House ornaments, etc.



A, Vaulted drying scaffold for kokerit leaves. Below Rappu Falls, Essequibo River.
(Photograph by H. P. C. Melville.)



B, An example of decorated house. Uaupes River district. (After Koch-Grünberg.)

SCAFFOLD FOR DRYING KOKERIT THATCH; A DECORATED HOUSE

the runners. In our own colony at Karinamba village (Makusi) near Pirara, Rupununi River, Barrington Brown speaks of two of the houses with mud walls being built on long posts 10 feet high, with floors made of split palm stems (BB, 133); but these would be evidently similar to what I have observed in certain Makusi houses (sec. 301) of the close neighborhood, and, for reasons already stated, can not in any sense be regarded as pile or two-story dwellings.

317. At Inongkong, another Makusi village, at the back of the Toka ranges, Rupununi River, I came across what I then thought was a most remarkable building (pl. 63 B), on a rectangular ground plan, where the ridgepole, supported on two forked main posts, was laid across the shorter axis of the building. The eaves of the roof projecting in front were supported with poles, and across these supports were tied split kokerit leaves. But since that time I have seen a few other buildings similarly constructed. There is one at Wararamuri Mission, on the Moruca River, which I have been told is the lazy man's way of building, where the wall plate has been dispensed with, the runner taking its place. No doubt in such cross-roof houses as these, comparatively shorter runners and ridgepole are utilized.

318. Several plants are used for purposes of thatch. Their leaves are

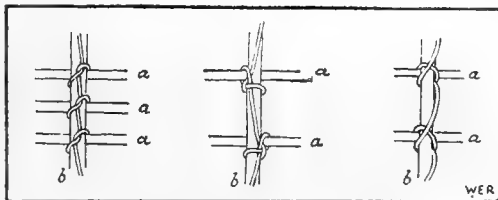


FIG. 77.—Different methods of tying the rods (a) to the rafters (b) prior to thatching.

attached in various ways to the rods, which are fixed to the rafters by at least three different methods (fig. 77). In the more modern houses a ridging may be made of four coconut, manicol, etc., leaves plaited together after the style of a rain shelter (sec. 296).

319. *Manicaria saccifera* Gaertn.: The truli palm of the Creoles and Arawak, employed in the Arawak, Warrau, and Carib houses of the coast lands. Provided they have been well sundried previously to being stored away upon the cross beams of a house, the leaves can be kept, according to the weather, for from 9 to 10 months or more; but in wet weather they will rot quickly, the ribs becoming soft. This is why in wet weather, if the roof is urgently required, the truli leaves are put on green, but it is not good practice because they shrink more or less and the ties become loose. It is one of the best thatching materials available for the Indians and will last for from 10 to 14 years, especially when continually subjected to the action of smoke. The leaf is folded along its midrib before being tied to the runner with a sharply pointed long itiriti strip. Holding it more or less horizontally with its front toward you (pl. 64, fig. 1 A), bend half the leaf down over the back of its midrib, working from

base to apex, with the right hand squeezing it bit by bit from left to right, in proportion as the left hand drags the midrib from right to left. This will produce what is called a right-hand truli. A left-hand truli is made in similar fashion, but left and right are reversed, the left hand squeezing the midrib from right to left as fast as the right hand can drag it from left to right. Strictly speaking, the proper employment of a right or left-hand truli is dependent upon the direction of the prevailing wind, with the idea of preventing the latter from lifting up and tearing the overlapping edges of

the leaves. In fixing truli for thatch (B) the doubled leaves are put on in pairs, one midrib (that of the under leaf) in advance of the other. In the actual tying, the itiriti strand binds the outer midrib to the runner, although it, of course, pierces in transit the folded halves of the under leaf; according as the leaves are put on from right or left, so will the tying proceed, but in either case there will result an exposure of leaf edges on the outer surface. Now, in building a truli side or partition wall, this exposure on the one surface is obviated by each pair of leaves inclosing the midribs of another pair so that each loop of the tying strand fixes four leaves to the runner (C). The proper way with each of these pairs is to see that one constituent is a right-hand leaf and the other a left-hand one, so that the fronts of the midribs are exposed on both wall surfaces. According to the length of leaf employed—and they may be from 4 or 5 to 8 feet or more—there will be from two to four runners.

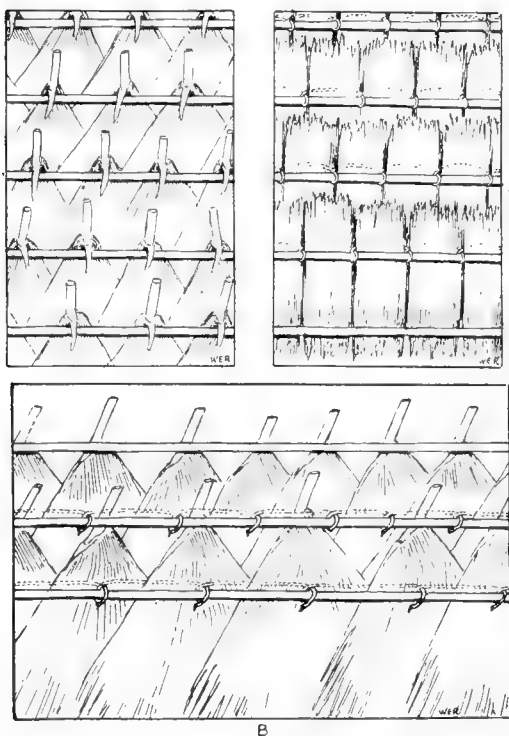


FIG. 78.—Ite palm-leaf thatch.

other pair so that each loop of the tying strand fixes four leaves to the runner (C). The proper way with each of these pairs is to see that one constituent is a right-hand leaf and the other a left-hand one, so that the fronts of the midribs are exposed on both wall surfaces. According to the length of leaf employed—and they may be from 4 or 5 to 8 feet or more—there will be from two to four runners.

320. *Mauritia flexuosa* Linn.—The ite palm: Its leaves would seem to have been commonly used by the Warrau both on the Orinoco (G, I, 145) and elsewhere (HiB, 327; HiC, 239), though these people certainly employed truli also. Ite leaves are likewise to be seen

on Makusi, Wapishana, Patamona, and Arekuna houses. Their use is of very wide distribution. The young leaves, just before they expand from the early spikelike form in which they develop, are shaken until the leaflets fall apart. These leaflets are then cut off from the leafstalks, gathered into small bundles, and laid on as thickly as possible, much as straw is used for thatching in the homeland. I have seen the Taurepang (Arekuna) make use of them in this manner (fig. 78 A). The Makusi, Wapishana, and Patamona will employ the leaf-entire, but the method of fixing will depend upon whether the front or back of the leaf is to be exposed, because it can

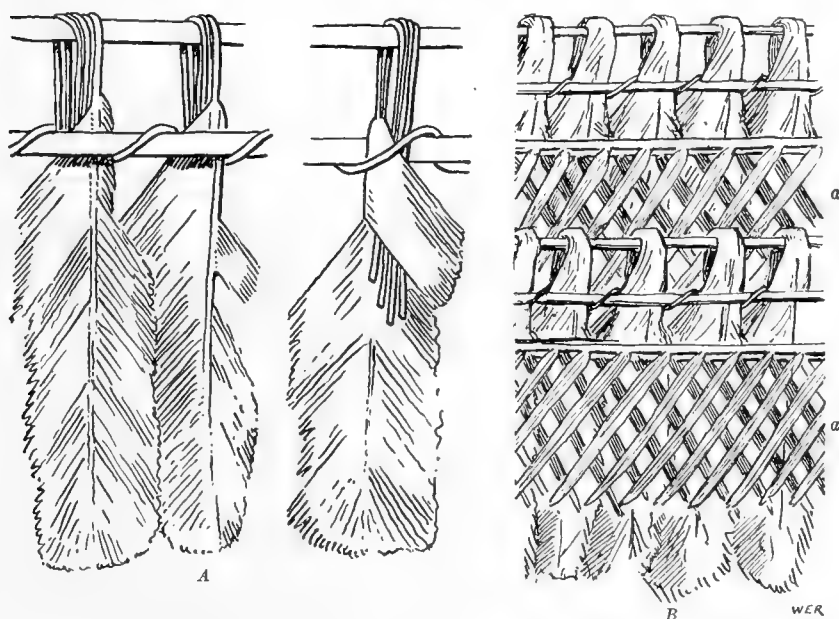


FIG. 79.—Dallibanna palm-leaf thatch. A, Used by itself; B, interspaced with split manicol, turu, etc. (a).

be used both ways. If the front is to be outside, the leaf is split down on either side of the midrib, which, after more or less trimming, is just hung over the lath, its own weight and pressure rendering it independent of any tying string (C). If the back is to be exposed, the leaf is pierced in two places, an itiriti string passed through and so tied, one after the other (B). An ite-leaf roof does not last long, it being invariably eaten up by insects.

321. *Geonoma baculifera*, the "dallibanna" palm, are strung on long, straight laths cut from the stem either of the buba or paschiúba (iriarteá) palm or the manicol. Two such runners are laid on the ground, and the leaves, in groups of two or three, bent over the upper one and tied with vine rope, itiriti, etc., onto the lower. They are bent over the top lath either by their stalks or their own bases.

When both lengths of runner are completed they are attached at their extremities to the rafters and so put on, one pair over the other, after the manner of huge wide tiles (fig. 79 A). Dallibanna leaves have to be placed in position within a day or so after cutting them, because on drying they crack, and therefore could not be looped over the runner. When scarce they can be used in alternate rows with split manicol or turu leaves. The latter are split down the midrib and the two halves placed together at opposite ends, so that the pinnules cross in a sort of latticework, the two half midribs together acting as the runner (fig. 79 B). Dallibanna is to be seen on Taruma, Arawak, Carib, Akawai, and Makusi houses.

322. *Maximiliana regia* Mart., the kokerit palm, can be used in two ways: The whole leaf is cut into lengths of about 2 feet each

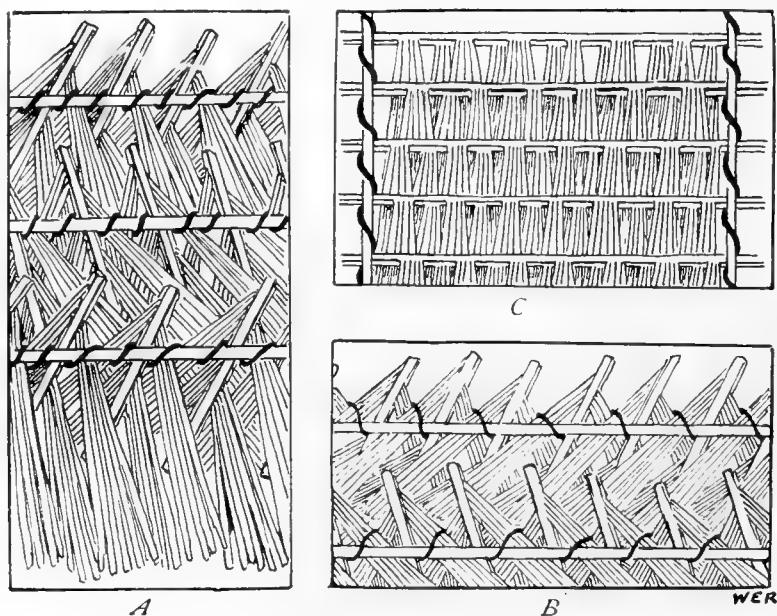


FIG. 80.—Kokerit palm-leaf thatch.

and tied onto the runners from right to left, or vice versa, the lengths being made to slope alternately to the right and left (fig. 80 A, B). It may be used throughout the whole roof thatch or only around the circular portions at the front and back of the Makusi and Wapishana houses. The other way is to split the leaf down from the distal extremity of the midrib, then thin down its two halves with a knife, and finally tie them together at opposite ends so that they may be used as a rod or runner (C). In this manner the leaves may be used either by themselves or mixed with alternate layers of dallibanna, as is seen in many Carib houses on the Barima, etc. When

used in lengths, however, the leaves may undergo preparatory treatment on a special vaulted scaffolding (pl. 65 A), to which they are fixed in horizontal rows to dry.

323. *Euterpe edulis* Mart., manicol palm; used by splitting the leaf longitudinally and tying the two halves with opposite ends together so as to act as a runner. The pinnules form a sort of latticework, as with the turu leaf (fig. 79 B, a). The whole roof, especially in the smaller square houses of the Arawak, may thus be built of (doubled) row upon row of manicol. Carib houses may be built with alternate rows of manicol and dallibanna (sec. 321), or even itiriti leaves. The latter are fixed in position by bending the petiole over the lath and piercing it through the blade. There is, however, another way in which the manicol leaves may be employed: after being split as before, but corresponding ends placed in apposition, they are plaited along one side of the midrib, a pinnule ("stock" of the local residents) being taken from each half leaf, and the two then bent over and allowed to hang down behind. Sometimes two stocks are taken from one leaf and one from another, this all depending upon the interspacing of the stocks, i. e., how far apart they are. When a number of pairs have been plaited they are tied vertically onto the laths like truli leaves (sec. 319). This kind of thatch will last four or five years. On the upper Demerara River, with Arawak and Akawai. I have also seen it now and again on the side walls of certain Makusi and other houses. Manicol leaf, other things being equal, is better than kokerit, owing to the pinnules being closer.

324. *Ænocarpus bacaba* Mart., turu palm: Usually a horizontal row of manicol palm is alternated with a row of turu. The reason for this is that by itself manicol would not last any great length of time, whereas by itself turu is too thin, or, rather, the pinnules are too narrow, and so would admit of the rain dripping through. More than this, both manicol and turu require that they be thatched within 24 hours and only during that portion of the month when the moon rises in the early morning, between 2 and 4 a. m., because when the moon rises in the early evening the crickets would be present and eat the leaves within five or six days. On the other hand, these insects will not attack them after they have dried for a couple of weeks after being fixed in position. As already mentioned, turu can also be employed alternately with dallibanna (sec. 321). In Arawak and certain Makusi houses, where no other materials are easily procurable, small, broad leaves of a common aroid (*Anthurium acaule*) are used, strung together, many on a stick (IT, 209). I have observed the same leaf, apparently, on two occasions in the Makusi country. At an Indian settlement near Savonette, Berbice, Pinckard has stated that

the roofs were neatly thatched with leaves of the coconut or the mountain cabbage (Pnk, I, 505). The lu palm, another species of *Oenocarpus*, can be split and used like the kokerit. Paripi palm leaves are to be seen on Akawai houses (App. II, 113).

On the upper Demerara there is a kind of cutting grass utilized for thatch. It is about 4 feet long, known to the Arawak as wé, and just placed in position by bending over the lath, like agave leaves, on side walls (sec. 302). Among remaining thatch plants there is the *Martinezia caryotaefolia* and *Acrocomia sclerocarpa* (SR, II, 236).

325. Like the paintings on the rocks, those in the houses on the main posts (SR, II, 471), and on the walls, all require further study and elucidation, somewhat on the lines that have been followed with those met with in the upper Rio Negro region (KG, II, 240-243). Here the Indians show a high esthetic sense in the manner in which they decorate the walls, inside and outside (pl. 65 B), as well as the main posts, with variously colored designs and carvings. So also Crévaux speaks of seeing allegorical pictures painted on wood in white, yellow, and red clays moistened with water at the Roucouyenne village of Macouipy, on the upper Yary, Cayenne, and gives an illustration (Cr, 108). He also makes mention of such pictures on wood in an Apalai village on the Parou River (Cr, 302). Among the Makusi of the Rupununi Schomburgk states that the figures seen on the women's apron belts were identical with what he saw executed, both with white clay, red or black colors, on the hut walls, on the paddles, corials, and weapons, either with the fingers or a bit of wood. "It is peculiar," he continues, "that only the women do this painting. . . . When a man finishes some instrument or weapon he hands it over to the woman, who, without any copy, exercises her innate art upon it" (SR, I, 359).

326. With regard to furniture there is little that is purely decorative, most of it being utilitarian. Among the Carib in Guadeloupe were found a vast number of human bones and skulls hung up about the houses, like vessels intended for holding various things (DAC, 438). The nations of the Orinoco had the custom of suspending from the roof various plaited figures (sec. 766), representing the number of enemies whom the house master had killed (G, II, 91). On the branches of the upper Rio Negro various human, animal, and bird figures (pl. 64, figs. 2, 3), plaited from palm leaves or manufactured from corncobs, are hung from the rafters, etc., some of the latter objects being utilized as targets by the youngsters (KG, II, 244). Indians, as a rule, have a curious habit of hanging up or sticking against the rafters of their houses the bones or skulls of various small animals which they have killed and eaten (BB, 161)—e. g.,

jawbones of the red howler and couata monkeys, deer skulls, etc., supposedly kept as trophies of the chase. But it should be remembered that the bones of certain animals may be preserved in similar situations as charms, etc. (WER, vi, 298.)

327. Among the Island Carib there was not only a separation of buildings for separate uses, but the division of a building into distinct chambers. Thus besides a little detached building, where they took their rest and where they received their friends, each family of any size had two other sheds. One served as kitchen, the other as a storeroom for their bows, arrows, clubs, baskets, reserve hammocks and all their little ornaments and kickshaws (*caconnes*), which they used on high days and holidays. Their little huts were made in an oval form of pieces of wood planted in the ground, over which they put a roof of palm leaves, etc. They also used small reeds fastened across for the palisades, which served as walls for their habitations. Under every covering they had as many partitions made as they would have rooms. A simple mat served among them the office of our doors, bolts, and locks. There was nothing above their heads but the roof itself, and under their feet only the bare earth; but they were so careful in keeping it clean that they swept it as often as they saw the least filth upon it. This they observed in their private houses; for commonly, their (grand) carbet or public house where they met for their festivities was very dirty, with the result that it was often full of chigoes (RO, 489-490). Palm leaves—e. g., latanier (RO, 81) cane, and certain grasses—are said to have been employed for thatch. It is said of the Carib Islanders that the men built the houses and canoes, but the roofs were made by the women (PBR, 242).

CHAPTER XVIII

DOMESTIC IMPLEMENTS AND REQUISITES

- Benches, stools: General consideration (328); evolution of the symmetrical forms (329); asymmetrical (330); adaptations of natural forms (331).
Tables (332).
Babracotes (333).
Cassava graters: Natural forms (334); stone-chip graters (335); their manufacture by Taruma (336-341); other sources (342); how used (343).
Cassava canoe (344).
Cassava squeezer: Distribution (345); manufacture (346-354); use (355).
Cassava sifter: Arawak and Warrau (356); Makusi and Wapishana (357); Makusi, etc., farine sifter (358); other types (359); how used (360).
Baking ovens, griddles: Stone (361); clay (362); iron (363).
Fire hearth (364).
Cassava smother (365).
Fans (366); Arawak (367); sawfish and wishbone pattern (368-371); sting-ray gill pattern (372-374); Carib (375); Akawai (376).
Drinking trough (377).
Stirring paddle, spoon (378).
Broom (379).
Pestle and mortar: Wood (380); bark (381); stone (382).
Sugar mill (383).
Cups, vessels, vats, etc. (384).
Boxes: Adaptations of natural forms: Bamboo, seed, monkey "throat" (385); sewed leaf (386); plaited (387).
Bags (388).
Clay pots, pans, water vessels, etc. (389-391).
Pot stands, head-pads (392).
Mats: Close-work basketry mats compared with certain trays (393).
Classification (394); no special edging distinct from the foundation (395); a special edging on two opposite sides only (396); a special edging around whole circumference (397); roll-up mats (398).
Mat satchels (399, 400); bark mats (401).
Trays, classification (402).
Rectangular.—With straight vertical rim or edging plaited independently of any rail or weft (403); after being wound over a supporting rod or rail (404); or including a series of rails (405); with concave outward sloping rims (406); hanging trays (407).
Circular.—Edging formed of its own strands specially twisted and plaited (408); or of a capped lining (409); or of a series of rails (410); hanging trays (411).
Baskets, made of specially prepared strands as opposed to adaptations of natural forms:
Hexagon type of base.—With a single weft (412-414); with a multiple weft (415).

Baskets, made of specially prepared strands, etc.—Continued.

Circular or oval type of base.—Radiate (416); vertebrate (417); diaphragm, hexagon (418); diaphragm, loop (419, 420); unenclosed, twined (421); unenclosed, pentagon (422).

Cone type of base.—Open-work (423); close-work (424).

Rectangular type of base.—Hipped (425, 426); gabled (427); flat, hexagonal (428); crossed quadrilateral (429); checker (430); armadillo (wicker) (431, 432); hour-glass (twilled) (433–436); single central figure, completed article having the shape of a cylinder (437); tub (438); belly (439); basin, bowl (440); multiple figures, completed article having a box-shape known as pegall, satchel (441–446).

Freaks (447).

Classification of baskets (448).

Cover basketry (449).

Knapsacks (450); patterns (451); covers (452).

Adaptations of natural forms to mats, trays, baskets, knapsacks, etc. (453–457).

328. Benches, stools.—The animal-like carved seats and stools described by Acuña among the Carib, says Schomburgk, we found still among them; and not only among them, but also among the Arawak (SR, II, 432). The reference to Acuña is very probably the following: "The Caupuna and Zurina tribes on the south side of the Amazon, near its junction with the Rio Negro, are the most ingenious and curious handicraftsmen that we saw in all the country. Without any other tools than such as I have spoken of before, they make chairs in the form of beasts, with so much curiosity and so commodious for a man to sit at his ease that I think the invention of man can not contrive better" (AC, 142). Indeed, it has been admitted that they are often so carefully scooped out and shaped to fit the body of the sitter that they are as comfortable as any cushioned stool could be (IT, 297). On the other hand, they may be cut flat (e. g., among the Siusi, etc.). With the Ojana the upper portion of the bench is occasionally flat. These they call apika. Others are round and they call them kololo (GO, 3). The two ends of the seat may be left plain and square (pl. 66 A), as among the Ojana of Cayenne (PBA, 188) at one extreme of the Guianas, and among the Uaupes River Indians at the other (ARW, 352). Nevertheless, as already mentioned, they are often formed into grotesque figures (heads) of tortoises, frogs, armadillos, alligators, and other animals . . . bright-colored seeds and occasionally pebbles (even a chip of looking-glass) are inserted to represent the eyes (IT, 297). In Surinam, Kappler speaks of alligator, beetle, and "tiger" heads being represented (AK, 144, 185). However, as in figure 81 G, R, S and CC, while one end of the seat indicates the particular animal's head, the other may either show its tail or the head of some other creature. All of these symmetrical benches, whether indicative of animal or not, are carved in one piece from a solid block, and have four limbs or legs—straight, angular, or curved—which in all the larger

(higher) specimens remain attached below, a pair on either side with the length of the article. In the lower stools the limbs on either side may be separated—a difference evidently depending upon stability. Some of these symmetrical benches are over a foot in height, but others are met with among the Akawai of the Pomeroon and among the Patamona that are not more than 3 inches; but even in these cases traces of the four limbs are well defined. Bearing in mind these variations in size, it will be readily conceded that there can be little basis for the statement that the desirable object of these low seats or benches is to raise the hams of the Indian, when sitting, out of the reach of chigoes. Whatever the height of the stool it could not prevent the feet and toes from being bitten. The benches belonging to the medicine men, certainly the Arawak ones of the Pomeroon, were specially decorated, and represented either the macaw, the alligator, or the “tiger,” or two of these combined (WER, VI, sec. 288). With the Makusi of the Rupununi, Schomburgk noted that the wooden stools were used almost entirely by women (SR, I, 359); but the statement is misleading. During one of the Arawak initiation ceremonies the young girl has to keep her seat on an alligator or “tiger” bench (WER, VI, sec. 273). These wooden seats are known as halla (Arawak), nohe (Warrau), tabai (Wapishana), mo-ré (Makusi), etc., as muli or mule to the Surinam (St, I, 388) and Cayenne Creoles (PBA, 188). The Island Carib had little seats made of one piece, of a red or yellow wood, and as smooth as marble (RO, 490). Unfortunately, further particulars are wanting.

329. There are one or two interesting points connected with these symmetrical benches—notably, the causes that have given rise to the symmetry, to the shape, and to the animal representations. These will be better appreciated from the following brief survey of the more primitive forms (each one complete in itself) as I have observed them in present-day use among Makusi, Patamona, Akawai, Wapishana, Warrau, and Arawak. The simplest form of such a bench is a section of tree log with a flattened undersurface (fig. 81 A) to lend stability. Another simple form is the more or less squared log (I, J). But to shift a heavy block of either description even a few feet requires the exertion of a certain amount of strength, to minimize which it is hollowed to a varying degree (B, C, K). This is the reason furnished me by the Indians themselves. It is much easier to excavate and pick out the timber lengthwise with the grain than transversely across it. The symmetry of two halves dividing the bench in its length, and the primitive shape of two wings attached to a top piece more or less definitely defined is thus accounted for. Weight without proportionate loss of strength can be still further reduced by cutting away at the sides, bases, or center of the wings.

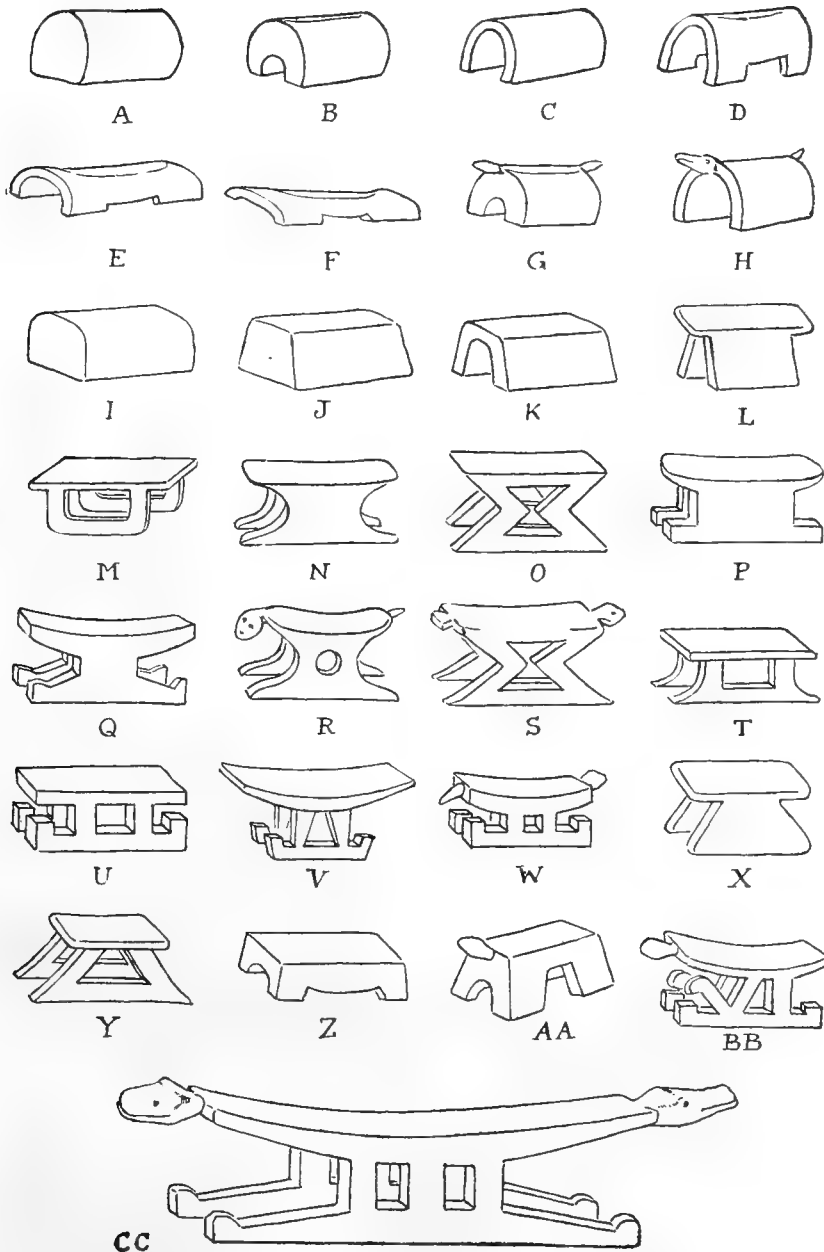


FIG. 81.—Diagram showing evolution of the bench in regard to symmetry, shape, and animal representation. A, B, Common forms: Arawak, Carib, Warrau. C, D, E, F, Akawai. C is also an Oyana type. (GOE, pl. vii, fig. 2.) G, H, Makusi. I, J, Common forms: Arawak, Carib. K, Carib. L, Makusi. M, Baniwa. N, O, P, Patamona, Makusi. Q, Arawak. R, Demerara River. S, Taurepang (Arekuna). T, Uaupes Indians (ARW, 352). U, Makusi. V, Oyana (PBA, 188). W, Arawak. X, Makusi. Y, (Taruma and) Uaupes Indians. Z, Uaupes Indians. AA, Carib of Moruca River. BB, Makusi. CC, Warrau.

When at the side, the excavation may take place along its whole edge (L, M) or only at its middle (N, O, P, Q, R, S) or upper extremity (X, Y). If at the base, there will be a risk of loss of stability, and hence this variation is only met with in those stools which are inordinately low or inordinately strong (D, E, F, Z, AA). If the removal is effected at the center, the resulting aperture is either rectangular (M, T, U, W), triangular (O, S, Y), or circular (R). Should the stool be an extra large one there may be two rectangular openings, giving rise to three limbs, legs, or supports, as observed on the Moruca River (CC), on the Uaupes River (KG, 1, 139), and elsewhere. As a stool or seat the article is complete so far as the combination of symmetry, shape, strength, and weight allows. Whatever else it may be subjected to, such as shaving down, scooping out, painting, and carving (G, H, R, S, AA, BB, CC), is a secondary develop-

ment, a matter of decoration and ornament, whatever creature is represented being made to fit the stool. The stool has not originally been designed to represent either animal or bird. The only exception I can call to mind of the wings of a stool being excavated in such a manner as to fit the animal is the "praying mantis" seat of the Makusi (BB), where the insect's front pair of legs are indisputable (pl. 66 B).



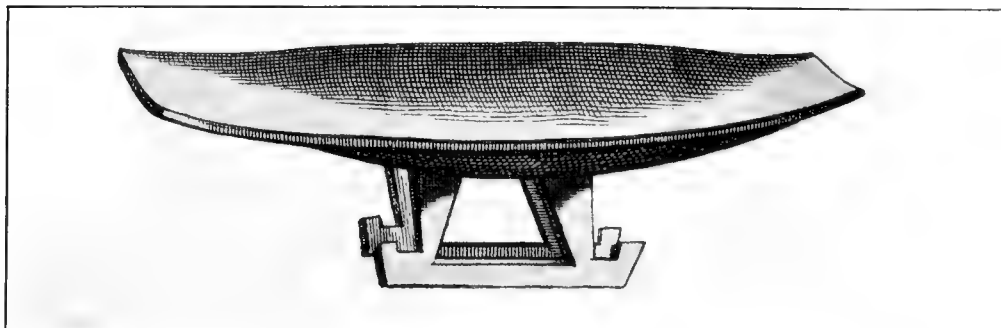
FIG. 82.—Makusi girl carrying the baby stool.

330. As to asymmetrical forms there is a three-legged stool met with throughout the country of these same Makusi—a triangular seat with a leg projecting from each corner (pl. 66 C). It is known to these people as the baby, and represents an infant in the position of sitting astride its mother's hips, the manner after which the children of the household may often be seen playing with it (fig. 82). The notch across one edge of the seat indicates the fold of the buttocks. Three-legged stools with and without animal presentations were used among the Antilleans.

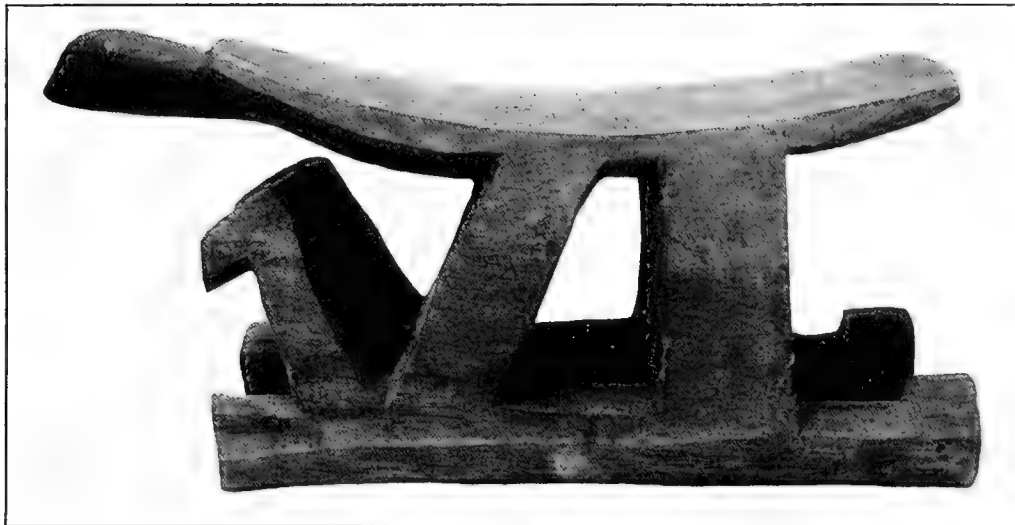
331. Whenever comparatively large-sized "turtle" are abundant the carapace may be used as a seat—e. g., Wapishana, Atorai (Cou, II, 311), Makusi.

332. There are also some among them (Island Carib) who have little tables, matútu, plaited from the leaves of a kind of palm which is called the latanier. They are fixed on four wooden pillars (RO, 472, 490). These relics of the past were evidently analogous with the large basketry cassava trays, fixed on four wooden legs, as met with on the mainland among various Carib and Arawak stocks at the present day (sec. 405).

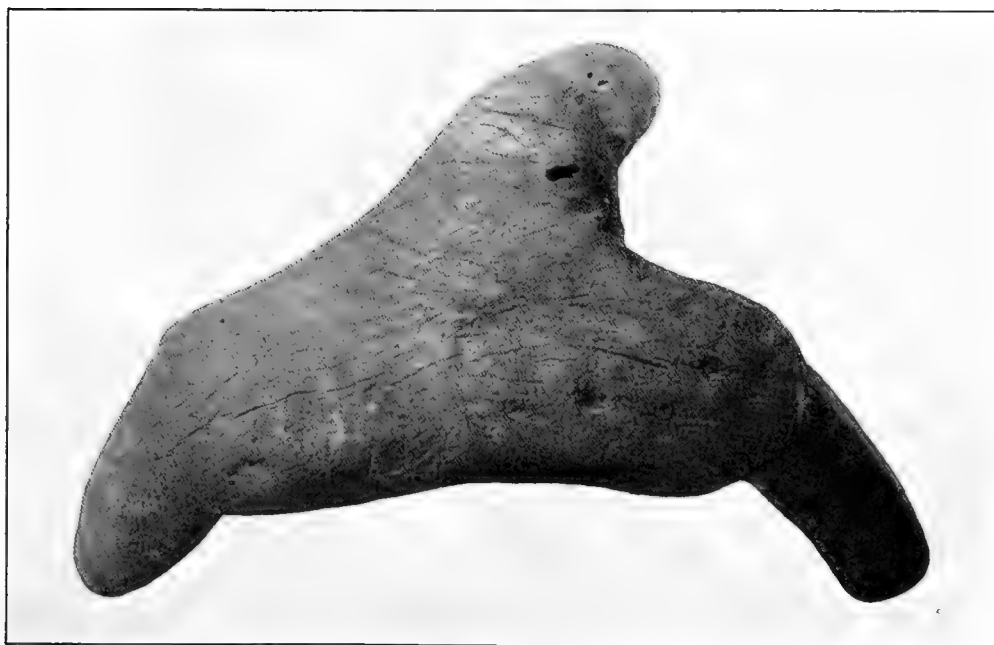
333. The babracote (fig. 83) may be made of three sticks stuck into the ground like a pyramid, tied together at their tops, and sup-



A, A bench from Cayenne. (After Barrère.)

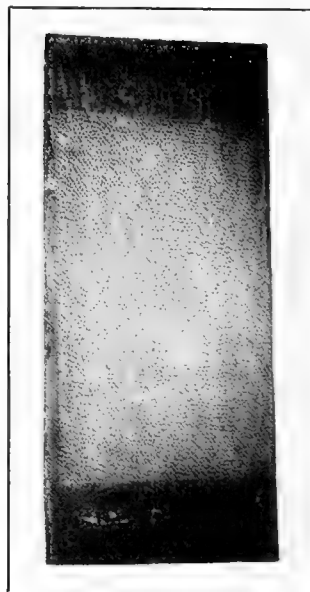


B, The "praying mantis" bench of the Makusi.



WOODEN BENCHES

C, The three legged stool of the Makusi.

*A**B**C**D*

CASSAVA GRATERS

A, Stone chips removed from a Taruma grater. *B*, Stone chip cassava grater. Taruma. (Georgetown Museum.) *C*, Cassava grating on the islands; middle seventeenth century. (After Rochefort.) *D*, Stone chip cassava graters from the Uaupes River district. (After Koch-Grünberg.)

porting a frame about halfway (A); or of four uprights in the form of forked sticks, upon which two pieces rest lengthwise, and on these other sticks are laid crosswise (B). In Makusi and Patamona houses I have seen portable ones—portable in the sense that they can be shifted as a whole to whichever portion of the habitation they may be required—made of four sticks tied together at their tops (C). The women seem, generally speaking, to look after the babracote. It is certainly their business to do so at night and to keep watch lest the house dogs should make a snap at whatever meat, etc., is being smoke dried.

334. For grating cassava, after it has been peeled, rough-surfaced stones were originally and are still being employed. Thus the Island Carib used certain hard, rough stones (*pierres dures et picotées*) which were found in the streams, something like our pumicestone (RO, 498). In British Guiana cassava was grated on a rough cragged stone (BA, 278), as was the case in Surinam, where it was known as matta (St, I, 388-389). A stone is also employed at the present day by the Waiwai and Taruma in our own colony. Many thin slabs break off the great granite and gneiss boulders, probably an inch thick and from 1 to 2 feet across. Weathering gives these rocks a characteristic roughness

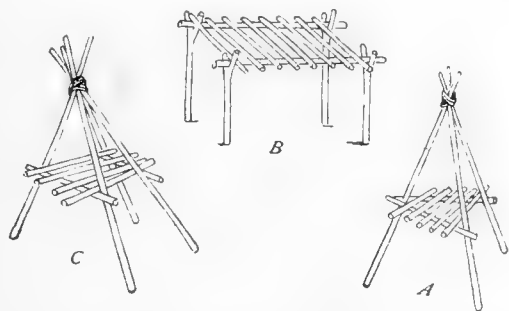


FIG. 83.—Types of babracote.

which answers admirably for grating, and, indeed, they are preferred when reducing certain fruits. They are used when all their up-to-date graters have been sold (JO).

335. The earliest mention of cassava graters seems to have been made for the mainland in Cayenne by Barrère, who speaks of these articles as bristling with little pieces of stone shaped in facets, etc., on a board 2 feet long and 8 inches wide, which formed a kind of rasp (PBA, 139). It formed an article of barter with the French (PBA, 31). One of the timbers from which the board is said to be constructed is the soft outer layer of the purple-heart (Br, 30). The stone chips have been described as flint flakes (FE, 68), hard green stone (Br, 30), quartz (Cr, 507-508), sharp pebbles (StC, I, 312), and granite (KG, I, 78-79). Besides karamanni the chips are stated to have been secured in position with a kind of dried bird lime (Cr, 507-508); a vegetable glue called wabba obtained from the fruit of a tree or shrub called ducalli (Ti, June, 1883, p. 125); or with balata (GO, 5). According to what Crévaux says, one might be

inclined to believe that occasionally this adhesive substance, whatever it was, did not prove sufficiently strong. Before using these implements . . . they have to be moistened so as to make the timber swell, which thus helps to keep the stone chips more firmly fixed (Cr, 119).

The largest kind of grater would appear to come from the upper Rio Negro area, where Wallace gives their dimensions as about 3 feet long and 1 foot wide (ARW, 326) with a "boss" on the front. The smallest, a kind specially made for grating Brazil nuts by the Taruma on the headwaters of the Essequibo, measures about 4 by 8 inches (JO).

336. A description of the manufacture of a cassava grater among the Taruma can be made under four headings: The preparation of the board (by men), the making of the stone chips (by women), their fixation into it (by men and women), and the final touches (by men).

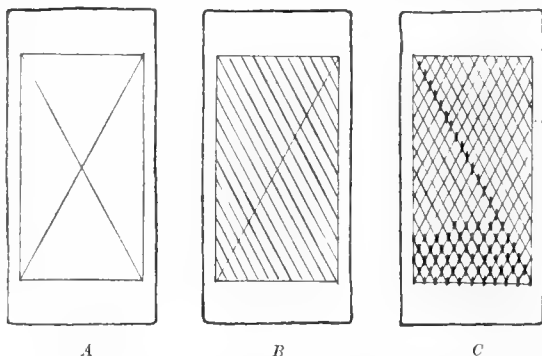


FIG. 84.—Stone chip cassava grater. Diagram showing the lines along which the chips are inserted.

draws his "diagram" on the front of the board with his finger dipped in a vegetable dye. This diagram or pattern is a rectangular figure, crossed with parallel diagonals, leaving a free margin of from one-half to 1 inch at the sides, and from 3 to 6 inches at the ends (fig. 84, A, B, C).

338. With regard to the preparation of the stone chips, the only quarry in the Taruma country where this particular stone (a porphyry) is obtained is about a mile above the Duarwau (Kuassi-kiju) Creek, where an outcrop runs across the bottom of the Essequibo River, and hence can only be obtained in the very dry season. Brown and Sawkins, in their *Geology of British Guiana*, London, 1875, page 193, thus describe the stone: "Just beyond the mouth of the Cassikitu (Kuassi-kiju) River the granite gives way and is succeeded by quartz porphyry. It is of a gray color, is composed of crystals of feldspar in a feldspathic base, along with green chlorite crystals in aggregation, and contains but few quartz crystals." Besides Taruma, the Waiwai, Parikuta, and Wapishana may come to fetch stone from here, though the Waiwai have a quarry in their own country on top

337. To get the board, a man will fell a tree (one of the *Simarukas?*), cut off a block 2 or 3 feet long from the outside part, and square it down with a cutlass to a piece from 15 to 20 inches wide and about 1 inch thick, making the front and back slightly concave and convex, respectively. He finally

of a mountain just beyond the extreme border of the colony. Blocks of from 10 to 50 pounds are removed, one piece of stone being broken upon another. The stone may be sometimes roasted to render it more brittle.

339. Flaking is now commenced in the usual manner along any convenient ridge, with the edge corner (back or front) of a broken piece of cutlass, about 6 inches long, which acts as a "hammer stone." Flakes come off, as a rule, about 1 to $1\frac{1}{2}$ inches in width and one-sixteenth inch in thickness; and in various shapes—circular, semi-lunar, lanceolate, and foliate, the latter frequently with a "shoulder." Great care is taken to get uniformity in thickness, but width and length do not matter. Experience gives great skill in this manipulation, and a good worker (invariably a woman) will only discard about 5 per cent of her flakes. Sitting on the ground, she rests the board lengthwise on her legs extended in front, and places a flake on the free end margin of the board, using the same cutlass corner edgewise. She will, with a sharp blow at the center, smash the flake into a varying number of pieces. Of these latter only a few will be suitable for her purpose, and of these few one or perhaps two may be of the necessary shape ready to be driven into the board straight away, while others may require narrowing or pointing. To do this she securely presses the chip under her left forefinger nail, covering with it all that portion which she wishes to retain, and leaving exposed that which is not required. The latter she then pulverizes with a blow of her cutlass. By this means the chip can be limited to any size or shape desired. Her aim is to get each chip pyramidal with two opposite sides broader (more flattened) than the intervening ones (pl. 67 A). When finally inserted in the board, the broader sides are fixed parallel with the long axis of the grater. The tapping continues from morning until night, and when a large number of women are engaged at the work, the din becomes almost unbearable to an outsider. On account of the cutlass edge catching the upper end of the finger nail each time a blow is struck the latter undergoes a curious horny development.

340. When the chip is worked into proper shape a hole is prepared for it in the board with a pointed bone tip—that from the femur of the black couata monkey—and chip after chip is inserted in regular sequence, the whole being guided according to the lines of the diagram. A commencement is made at the bottom right-hand corner, fixing a chip at every crossing of the diagonal, and following it up to the top left-hand corner. The bottom row is next started from left to right, with a chip as before at each intersection of the cross lines; then the next row from left to right, and so on until the diagonal is reached (fig. 84 C). It will be noticed that by this arrange-

ment the units of one row lie in spaces intervening between any two in the row preceding or succeeding—they run diagonally, like the rasps on a wood file. The board is now turned round, the bottom row commenced as before from left to right, and so on. When the top is reached the woman's share of the work ends. Working hard, she will finish one in three days.

341. The chips that have thus been placed in regular position are secured by (a man) pouring over them and the board a warmed mixture of karamanni milk and red paint (Bixa), pouring off and allowing to dry. When dried, he will paint, sometimes incise, the back of the board and the free margins of the front in various patterns (JO).

342. Besides being manufactured in the area of the headwaters of the Essequibo by Taruma (pl. 67 B), Waiwai, Parikuta, and per-

haps formerly on the Rupununi by Wapishana, another important source of supply of the stone-chip graters is from the upper Rio Negro district, on the Rio Içana, by the Katapolitani and Karutana women, both of them Arawak stock (KG, I, 78-79). These latter

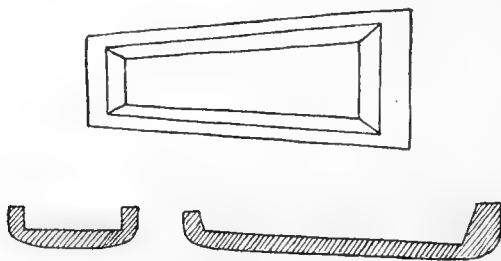


FIG. 85.—A specially made cassava "canoe."
Makusi.

articles are about 3 feet long and 1 foot wide, rather concave, and with a central longitudinal boss at the narrower end (pls. 67 D; 75 C, a).

343. To put a grater to use the woman, sitting on the ground, may place it between her legs and so scrape the cassava root in a sort of forward and backward movement; or, standing up, she may tilt the grater at an angle, bend over, and support it in the fold of her waist. On the islands, after the rough stones were discarded, it would seem that the grater was supported by a sort of stand, as represented in an old woodcut, without any letterpress (RO, 105). Strange to say, a man is figured as doing the grating, but it is difficult to decide whether he is intended to represent an Indian or a Negro slave (pl. 67 C).

344. Cassava "canoe."—The detritus of the cassava rubbed upon the grater is dropped and collected into some sort of utensil, generally a curled-up piece of bark or a portion of broken-up corial. At a Makusi village on Piwiyi Creek I saw such a cassava canoe specially made for the purpose, of peculiar shape and of unusual size (fig. 85). It was flat bottomed outside and inside, deeper and wider at one end than at the other; the inside cut square and sloping at

an angle, the outer side rounded off. It was about 5 feet long and 7 or 8 inches high at the shallower extremity, which was about 20 inches wide. From the "canoe" the cassava is passed into the matapi.

345. The cassava squeezer, or matapi (pl. 68), which is perhaps its true Carib name, is met with from the borders of Cayenne, through Surinam and British Guiana, as far westward as the upper Rio Negro. This matapi was known in Surinam as the Carib snake (FE, 68), and in this connection it is interesting to note the legend given by Dance of the first Arawak man, who, by observing the motion of a snake while swallowing its prey and the direction of the lines upon its back, formed the matapi for expressing the juice of the cassava (Da, 102). The scientific history, however, of its evolution is very unsatisfactory. The circular sifter supported on a triangular frame through which the cassava juice was squeezed by hand pressure (sec. 236) would have got more or less sagged in the center. This may have led to the kamaiyo basket with a conical base (sec. 257), through which the paiwarri drink is still sometimes strained, and which, if lengthened and closed at the top, would satisfy the necessary conditions for rendering intelligible Van Berkel's description of the article as recorded some 250 years ago on the Berbice. He speaks of a "Press about 4 feet long and plaited very compactly with fine cane. The women now proceed to sit on it and press the overlying cover or board so much that it causes it (the juice) to run out below through a certain opening" (BER, 70). Is it possible that the present-time method of exerting pressure by means of a lever (sec. 355) has been introduced by the negro? On the Cuyuni the contrivance was called a *tenge* (BB, 24); on the Waini, where it was made from a species of *calathea*, Schomburgk speaks of it as *atupa* (SR, I, 124); while among the Uaupes River Indians Wallace calls it *tipiti*, at the same time mentioning how it constitutes a considerable article of trade, the Portuguese and Brazilians not yet having introduced any substitute for this rude Indian press (ARW, 337). Wallace employs the term *matapi* to express a wicker creel for catching fish (ARW, 339-340). Other names for it are *aru-huba* (Warrau), *ton-kí* (Makusi), *nirr* (Wapishana); *yuro* (Arawak). From the fact that Gumilla, so accurate an observer, makes no mention of a matapi in his description of cassava manufacture, though he speaks of the poisonous juice being expressed (G, II, 242), it may perhaps be assumed that the article was not known in his day on those portions of the Orinoco with which he treats. This conclusion is quite feasible, considering that even at the present day on the Uaupes River, not so very far away from it, the juice is still expressed by hand pressure (sec. 236).

346. The manufacture of the cassava squeezer (WER, II).—Terms: The Arawak Indians differentiate the component parts of a cassava squeezer (pl. 69, fig. 1, A) into head (*a*), mouth (*b*), body (*c*), and ankle (*d*). These terms I propose utilizing, with the modification of the last mentioned into an ankle ring, at the same time introducing a new element, the leg (*e*), between it and the body proper. So, for technical purposes the head (F) consists of a collar (*a*), through which the article is hung, and neck (*b*), while the body may be regarded as constructed of a shoulder (*c*), shoulder girdle (K, L, M, *a*), body proper (*b*), and hip girdle (*c*), and it is on these lines that the manufacture of the squeezer as a whole will be described. The cassava squeezer is only made by men.

347. Foundation: A commencement is made by plaiting at their center a set of itiriti strands into another series laid at right angles. As often as not, with a view perhaps to bringing out the pattern more distinctly or for other reasons, the elements of one set are laid on their outer surfaces, those of the other on their inner. The staining of the strands is not adopted for squeezers destined for domestic use. The plaiting process consists in passing each strand alternately under and over a set of three, each such strand at the point of overlapping and overlapping being always in advance of the one immediately preceding it, to the extent of its own width. The resulting stepping-stone arrangement is seen in plate 69, figure 1, B, where the squeezer is being manufactured on a foundation of 16 strands, 9 of which are placed horizontally and 7 vertically. But in the larger varieties, 24, 28, or 32 strands may be employed in the foundation, and under such circumstances there will be, respectively, 13, 15, and 17 placed horizontally, with 11, 13, and 15 vertically. Furthermore, for the larger specimens, which measure, on the stretch, well over 6 feet, the itiriti strands, which are continuous throughout the whole extent of the article, may not prove sufficiently long. In these cases a commencement is made by superposing each two strands to the extent of about 6 inches and plaiting them at their centers of superposition as if they together constituted but one. Another advantage of this "lengthening" process is that it affords the proportionately extra strength now required.

348. Collar and neck: Once completed, the rectangular foundation is turned around on its diagonal axis, so as to represent more or less the conventional diamond (pl. 69, fig. 1, C). The strands projecting from the upper and lower portions of one side of this diamond are next plaited into one another in such a manner that, as each successive strand reaches the lines, which will ultimately limit the upper and lower edges of the collar now in the course of formation, it is bent backward, outward, and downward at the former limit, back-



CASSAVA SQUEEZER. THE SMALLER BUT SIMILARLY PLAITED ARTICLE IS EMPLOYED FOR EXPRESSING THE OIL FROM THE CRABWOOD AND KOKERIT SEEDS

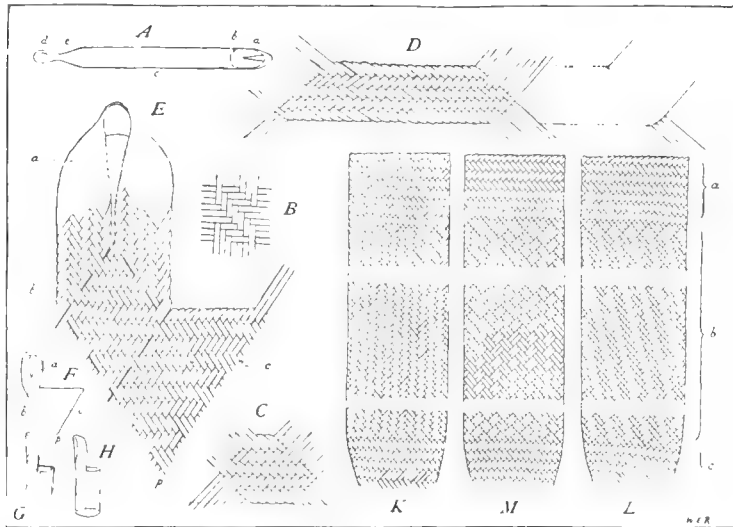


FIG. 1.—From head to hip girdle.

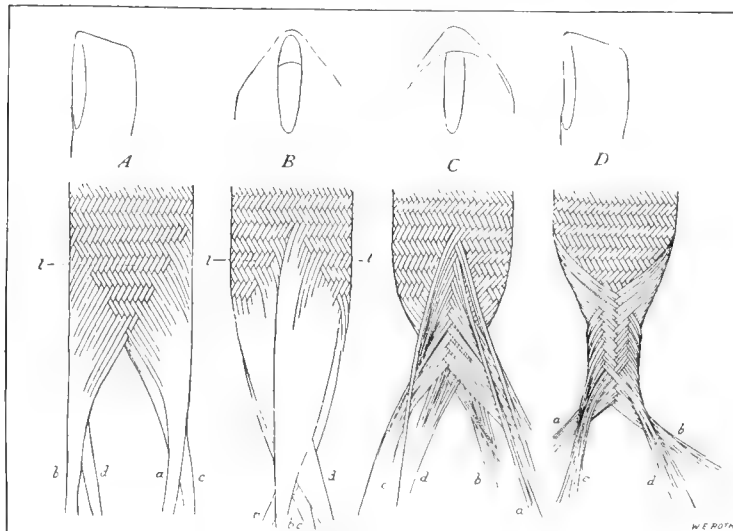


FIG. 2.—Forming the leg.

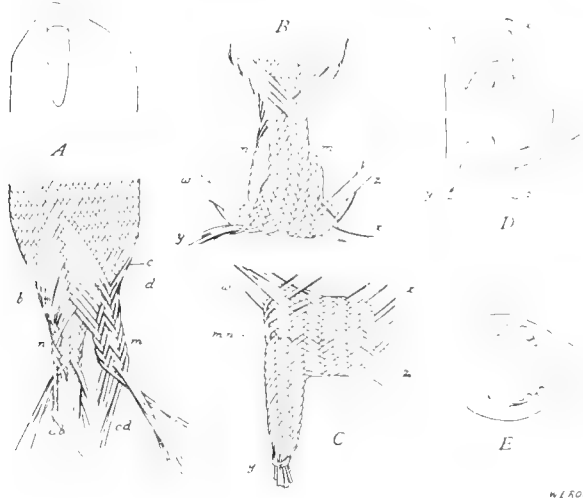


FIG. 3.—Forming the ankle ring.

ward, outward and upward at the latter. More than this, subsequently to the bending, each successive strand passes behind two others before it rejoins the plait. The plait is continued to form this band until such time as three strands alone remain at its lower outer corner (D). Occasionally during the bending process, each strand may pass behind three others, but four free ones will then have to be left at the lower corner. Half the collar being now finished, it is turned on its other side and the remaining half completed in similar fashion. The two lateral edges of the collar, which is bent on itself into more or less of a ring, are then plaited together and constitute the neck (E, F, *b*).

349. Shoulder: To form the shoulder (pl. 69, fig. 1, E, F, *c*) additional strands placed parallel with the free side of the collar just completed are plaited into those stretching therefrom, the former being ultimately worked in among themselves by the bending process (already described) upon reaching the limits of what the Indians call the mouth. When finished, the shoulder forms with the lower half of the collar a triangular surface with its vertex, the scapular point (*p*) downward. The number of additional strands inserted for the manufacture of the shoulder may be the same as that of those employed in the foundation ($9+7=16$ in the present instance), any extra being put in with the view, not only of increasing the capacity of the future body, but also of insuring that the total number—foundation, additional, and extra—together constitute some multiple of three. These essentials may be tabulated as follows:

Foundation.	Additional.	Extra.	Total.	Approximate number of stems used.
16	16	1 (or 4)	33	4
20	20	2 (or 5)	42	5
24	24	0 (or 3)	48	6
28	28	1 (or 4)	57	7
32	32	2 (or 5)	66	8

It thus comes about that the size of a cassava squeezer is gauged by the number of itiriti stems used in its manufacture, eight strands, as already shown (sec. 101), being allowed to each stem. Instead of describing the article as being so many feet long or of such and such cubical capacity, etc., the Indian simply speaks of it as so many itiriti. Those of six and eight itiriti, the largest manufactured, are orthodox (i. e., employed for actual domestic use); those of seven itiriti I have never seen, while all those of a lower denomination are made for sale

as curios, etc., to tourists and others. Though two squeezers may be made of the same number of stems, their length is not necessarily identical, this varying with the height of the rafter on which they are intended to be hung. It must not be forgotten that in the larger varieties the additional and extra strands may also be lengthened by superposition like the foundation strands (sec. 347).

350. Shoulder girdle: The two upper angles of the triangular area (pl. 69, fig. 1, E, F), formed of the shoulder and lower half of the collar, are next plaited and joined (G), the space intervening between the two free sides being filled up by a continuation of the process, with the final result that, extending from between the mouth to the level of the scapular point, there is now formed what may be regarded as the shoulder girdle (H). When the number of strands employed in the construction of the shoulder is not in accordance with the essentials laid down in the preceding table, the lower edge of this shoulder girdle will show an interspace, the width either of one or of two strands. Owing to carelessness, hurry, or forgetfulness, such a contingency will often happen, but it can easily be met by inserting within the lacuna the necessary one or two required. Though, under such circumstances, the skill and dexterity of the artificer may be called in question, the article is none the worse for it from an economic point of view. So far, the pattern followed in the plait has been the same all the way through—a horizontal series of exposed pieces of strand leaning on the slant upon another series, above and below, bearing in the opposite direction (K, L, M, *a*). This gives the pattern its Arawak name of ayuledáhe (to lean against).

351. Body proper: With the formation of the body proper, however, the pattern changes from horizontal to vertical, the plaiting now taking on one or another of three forms—the *assa-uda* (pl. 69, fig. 1, K, *b*), the *abuna-buna-tahu* (L, *b*), and the *aha-(h)abba-dahu* (M, *b*). The first is so named after the *assa* fish scales, which the pattern closely resembles, and *tuda*, the skin. The Warrau, however, speak of the pattern as a pathway cleared by *kushi* ants. *Abuna-buna-tahu* is the plural form of *tabuna* (a bone), the term applied to any little piece of exposed strand in a plait work. It is a pattern which, by its construction, has to be worked in more or less of a spiral, but instead of continuing each spiral throughout the length of the body proper it may be reversed after a time, then brought back to its original direction, and so on alternately. If the reversing process is followed, the resultant pattern as a whole gives rise to the appearance of vertically arranged very open zigzags. The term *aha-(h)abba-dahu* is adapted from *habba*, the four-legged cassava basket, the sides of which ought to be plaited in this (the

orthodox) pattern. The Warrau, however, describe this pattern as the snake mark.

352. Hip girdle: When the body proper has been thus constructed to the required length, the plait, whatever its pattern, reverts to the original or ayuledáhe form, of which three or four, of course horizontal, series are made. These constitute the hip girdle (pl. 69, fig. 1, K, L, M, *c*).

353. Leg: Starting from the center of the lower border of this hip girdle, front and back, the strands are divided and plaited to form two lateral triangular lappets (pl. 69, fig. 2 A, B, *l*), with the result that the free ends of the strands form four groups or tails, two of which are anterior (*a, c*) and two posterior (*b, d*). By passing successive sets of two strands, each from one anterior tail (*a*), alternately over and under corresponding successive sets of two strands, each from the other (*C*), and repeating the process with the posterior tails, the four groups of free strands will of course change places, the two at the back coming to the front, and vice versa, while the lappets are being simultaneously pulled into closer and closer apposition (*D*). Next comes the plaiting together on each side into a band (pl. 69, fig. 3 A, *m, n*), of the anterior and posterior groups (i. e., *a* with *b*, and *c* with *d*), the original underlapping and overlapping of three strands at a time being reverted to, but with the very important proviso that every two strands are superposed and plaited together as a single one. When, after each set of two has been worked in, it is found that there is a strand over, it must be superposed on the adjacent double strand, and all three plaited together as a single. In consequence of the former process, the lappets become gradually more or less surrounded and hidden. In consequence of the latter, the sectional area of the cylinder is first greatly reduced, while the cylinder itself next disappears in direct proportion as the two lateral bands (resulting from the plaiting together of the anterior or posterior groups of strands on each side) come into being.

354. Ankle ring: Save that every two strands are superposed and plaited together as a single one, each of these flat lateral bands is constructed on exactly the same lines as the original collar, the outer edge being "bent" in similar manner, the exact number of strands so treated varying with the size of ankle ring required. Suitable lengths being selected, these two bands are plaited together (pl. 69, fig. 3 B) to form the ring, the four groups of strands (*w, x, y, z*), resulting at their junction, being worked off, tied at their extremities (*C, D*) and folded inward so as to be tucked into the concavity (*E*) of the ring.

355. To put the matapi to use it is filled handful by handful, each well squeezed, from the cassava "mess" that has been deposited in

the canoe (sec. 344). It is next hung up by the collar (fig. 86) onto a suitable projecting beam (*a*), while a strong pole (*b*), passed through the ankle ring, is tucked under a fork made by tying a strong stick (*c*) at an acute angle to a house post (*d*). The pole acts as a lever, the fork as the fulcrum. By the woman throwing her whole weight, usually sitting, on the free end of the pole the matapi is extended, its diameter consequently diminished, the contents squeezed, and the poisonous juice, which is expressed through the

interstices of the plait, allowed to run down and drip into a vessel placed beneath to collect it.

A miniature form of matapi is employed for extracting the oil from the crab-wood nut paste and from the kokerit seed (sec. 25). In Surinam it was similarly used for obtaining oil from the awarra palm (AK, 281).

356. Cassava sifter.—Removed from the matapi, and subsequently dried and pounded, the cassava is next passed through a sifter, the manari of the Arawak and Wapishana. Arawak and Warrau make two varieties of sifter—one for their own personal use, another for sale and barter—the difference lying in the manner in which the

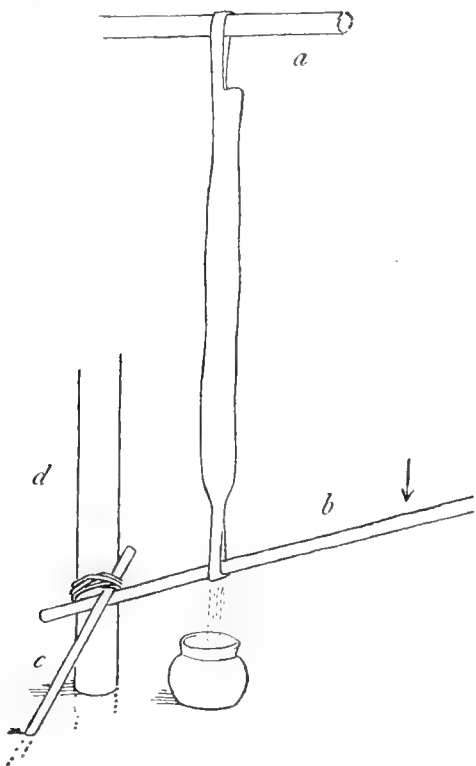
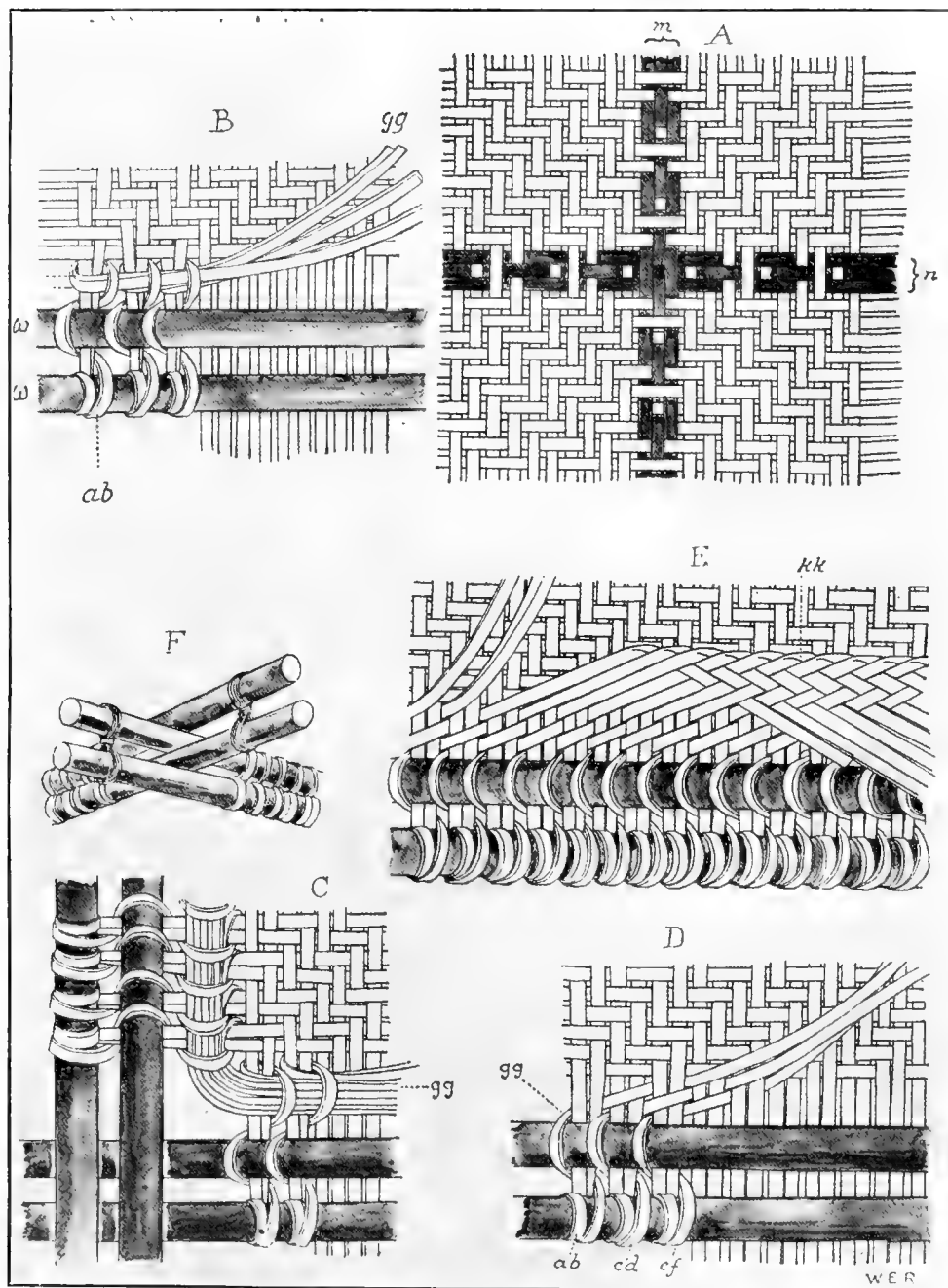


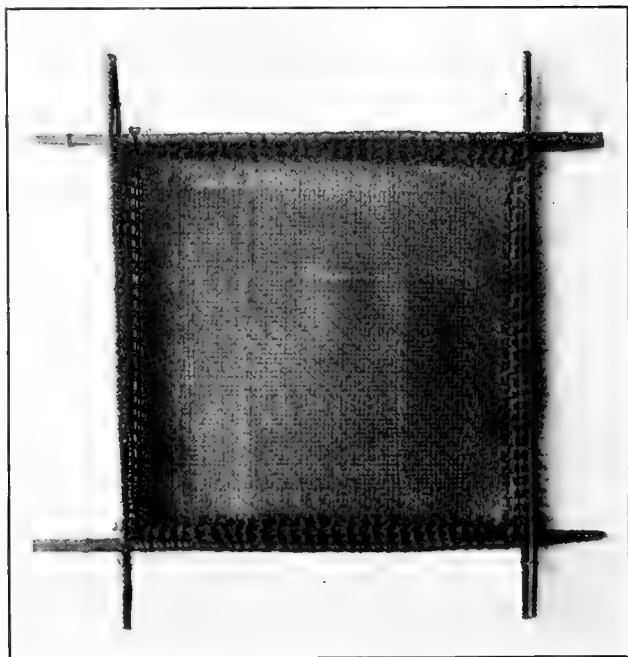
FIG. 86.—Method of using the cassava sifter.

edging is completed, the process of manufacture of the main body being otherwise identical. Itiriti strands are the ones employed (pl. 70 A), one set of three (*m*) being plaited into another set of three (*n*) placed at right angles to form a foundation upon which the resulting square body, about 18 inches in diameter, is plaited. As will be recognized from the illustration, the manner in which the two commencing treble sets are arranged allows for the comparatively large interspaces between the other strands as they are successively inserted. The plaiting of these consists in one strand alternately passing over and under two others. Along all four edges of the completed square the free ends of the strands project about

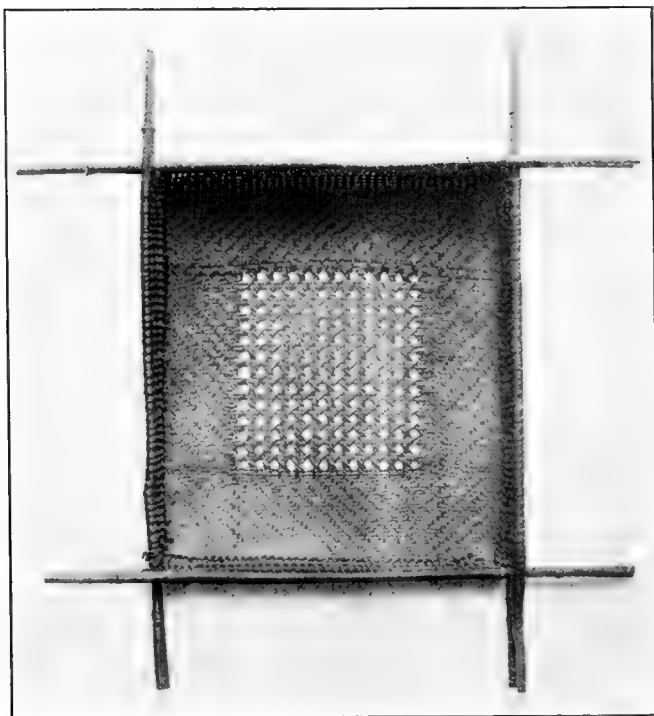


ARAWAK AND WARRAU CASSAVA SIFTER

A, Pattern of the foundation. *B*, *C*, The orthodox edging for home use. *D*, *E*, Edging employed if for sale or barter.
F, Rails locked and tied.

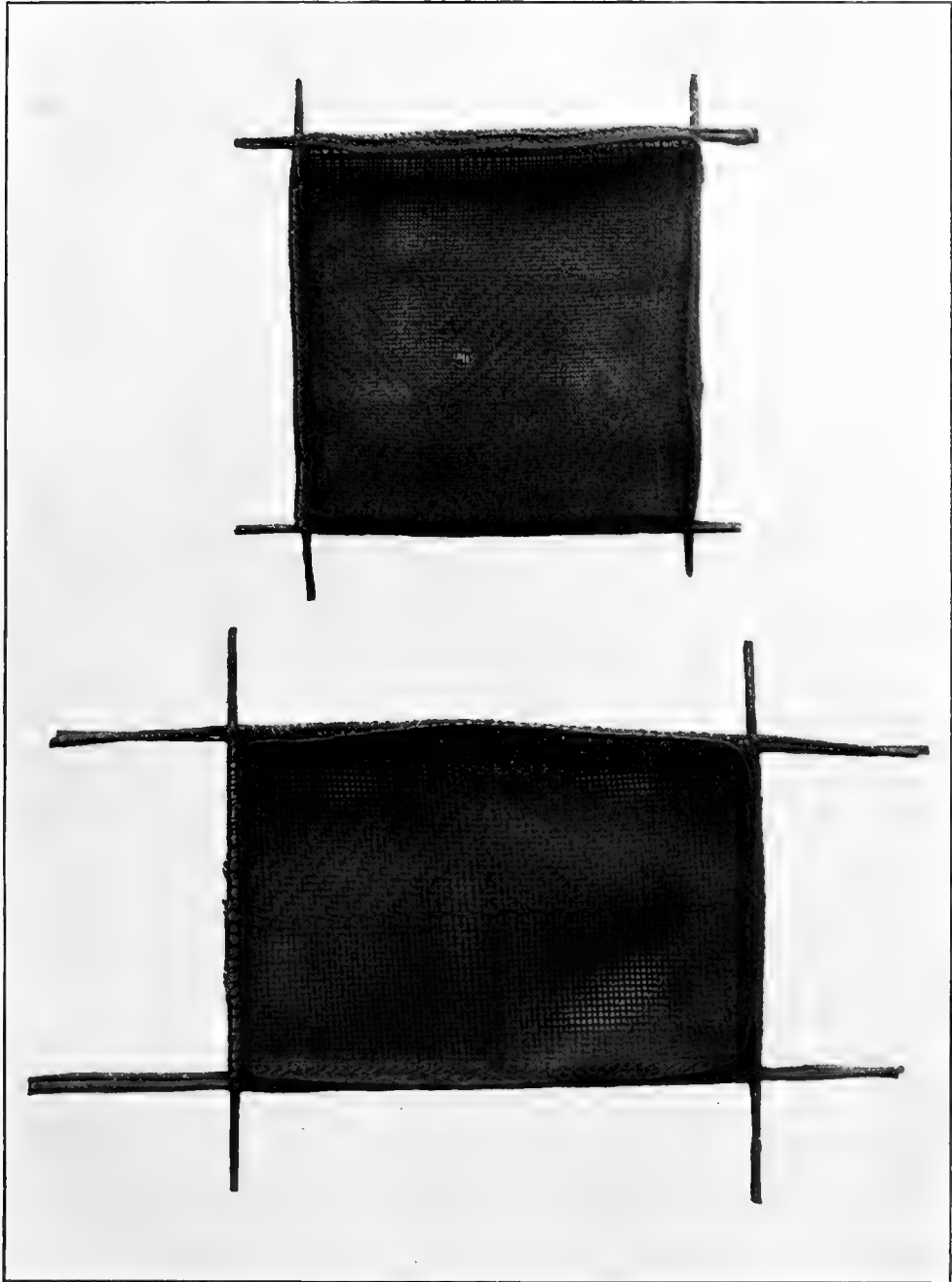


A, Cassava sifter. Arawak, Wapishana, Makusi, etc.



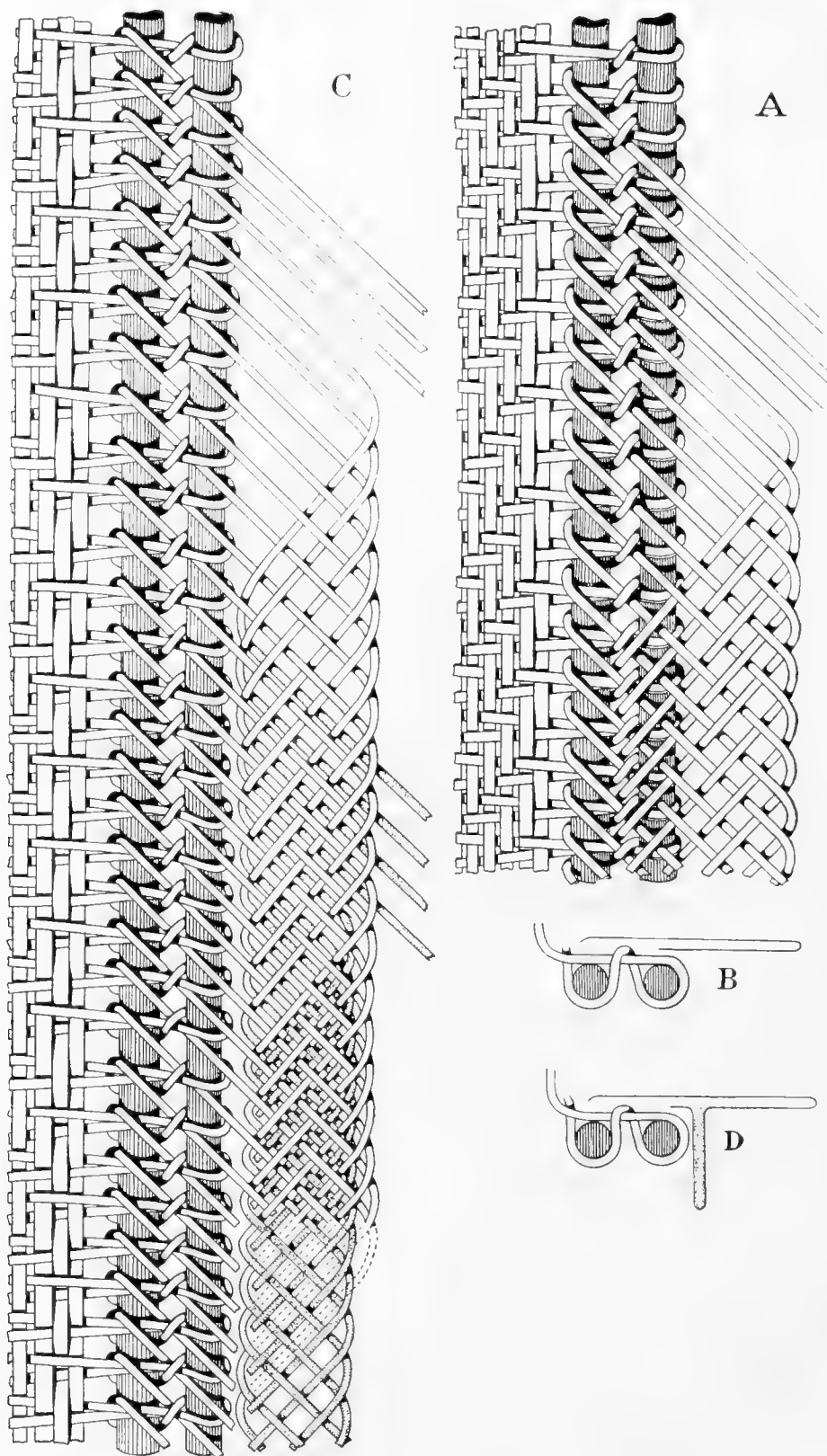
B, Farine sifter. Makusi, Wapishana.

CASSAVA AND FARINE SIFTERS



VARIATIONS IN THE MAKUSI CASSAVA SIFTERS

A, With a vertical laminated edging. *B*, With a combined vertical and horizontal laminated edging.



VARIATIONS IN THE EDGING OF THE MAKUSI CASSAVA SIFTERS

A, B, Vertical; C, D, combined vertical and horizontal laminated edging.

another 12 inches. Two sticks or rails (B, *w, w*) are now placed across the bases of the projecting strands so as to lie parallel with the edge of the square, the outer rail being about 3 inches distant from it. In the variety of sifter reserved for domestic requirements, which is naturally the stronger and better of the two, the edging is completed as follows: Starting at a corner from right to left, the projecting strands are taken up two at a time (*ab*), rolled twice over the outside rail, then passed behind themselves and over the inside rail, to be finally again tucked behind themselves, and now looped so that their free extremities (*gg*) lie on top. The same process is repeated with the second pair of strands, and so on, the free ends left over from the previous ones being always included in the lower loop. Of course the bundle composed of these free ends becomes too unwieldy after a time, when it will be appropriately thinned by cutting away as many as may be necessary. Upon completion of one side of the square the next is treated in similar fashion (C), the bundle of free ends remaining from the former being included in the lower loops of the latter. All four sides are thus similarly dealt with. In the variety of sifter (D) manufactured for purposes of sale, etc., there is no looping below the inside rail, but the two free ends (*gg*) of the projecting strands are together passed from behind over and under the two immediately succeeding pairs. The free ends of the next pair of strands (*cd*) emerge just below these, and the next (*ef*) below these again, and so on, the intervening space between the edge of the plaited square and the inside rail being just a little greater than the combined width of three strands. The free extremities still left projecting (E) are now bent or "broken," plaited one-over-and-under-two between themselves (*kk*), and finally trimmed. With both varieties, the article is now taken from off the flat, the position in which so far it has been plaited, and folded along each diagonal whereby the contiguous pairs of rails are locked, and where they are subsequently fixed by tying (F), the original square mat being thus converted into a sifter with a firmly raised specially constructed border (WER, v).

357. Wapishana and Makusi plait the body or foundation of their sifters with similar material on practically identical lines, save for the slight variation in which the commencing treble sets of strands are arranged (fig. 87). In the larger articles, instead of one treble set being crossed by another, there may be two crossing each way (pl. 71 A). Their edging follows the pattern of the orthodox Arawak type, but among the Makusi interesting variations have been met with, the projecting strands, subsequent to their attachment to the rails, terminating either in a vertical (pl. 72 A) or combined vertical and

horizontal (pl. 72 B) laminated edging. The technique is represented in plate 73 A, B, and C, D, respectively.

358. Among the Makusi and Wapishana of the Takutu is to be seen a sifter with the body plaited in two distinct models (pl. 71 B; fig. 88)—an inner central portion not distinguishable from the pattern to be observed on an "Austrian" cane seat, and an outer one iden-

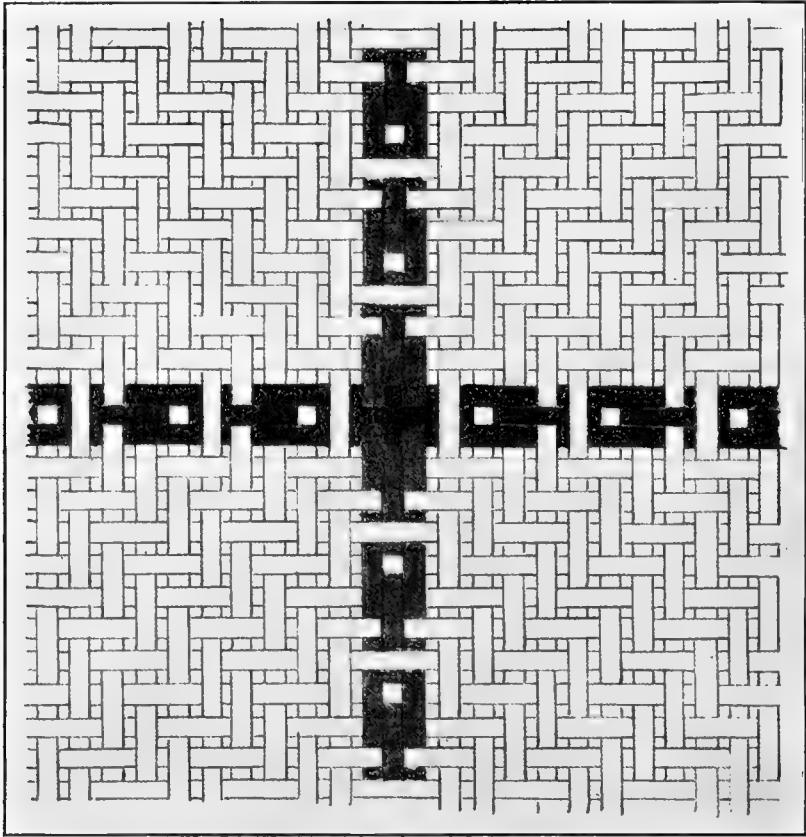


FIG. 87.—The Makusi and Wapishana cassava sifter.

tical with what has been already recorded. I have seen it employed in the manufacture of farine.

359. While the sifters of the Siusi (Arawak stock) and Uanana (Betoya) of the upper Rio Negro bear resemblance in their duplicated rectangular frames (KG, II, 220) to the articles above described, the technique of the body is quite different (pl. 74 B). The former is a checker pattern spaced; the latter a hexagonal one. (Secs. 106, 109.) In marked contract to these simpler forms are the very complicated round sifters of the Oyana (GOE, pl. VIII, fig. 4), and

of the Waiwai. Unfortunately, I have so far had no opportunity of handling a specimen so as to describe the technique.

360. To strain the pounded cassava the sifter is either rested between the forks of the big toes, over the extended and open legs, between which it falls onto a mat placed below (pl. 74 A), or else held upon a tray. In the latter case, dependent upon the size, it is placed over it, at right angles or diagonally. A natural form of strainer or filter, but not for cassava, is the sponge-like cellular tex-

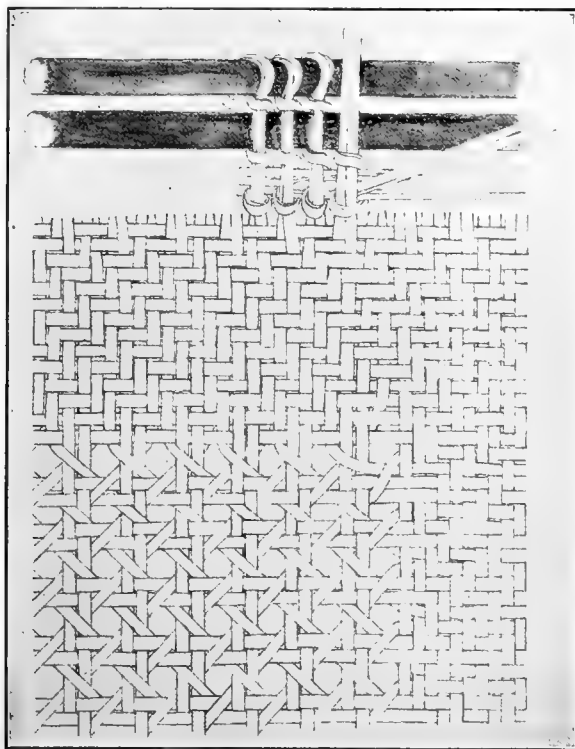


FIG. 88.—Diagram of farine sifter shown in plate 71 B.

ture of the fruit of the *Luffa aegyptiaca* used in the manufacture of urari (App, II, 474); another is the bundle of grass employed in the preparation of salt (sec. 151).

361. Baking ovens, griddles.—Among the Arekuna (Taurepang), Patamona, and outlying settlements of the Makusi, I have seen naturally split slabs from the granite and gneiss boulders still used for baking ovens. The present-day Taruma, Waiwai, and Parikuta also use them (JO). They may sometimes be seen chipped more or less roughly into circles of from 12 to 18 inches diameter. There are several references in the literature to the old-time use of flat stones for the cassava grids (St, I, 388; BA, 278; Cr, 119).

362. In the upper Rio Negro area Wallace speaks of certain cassava ovens, varying from 4 to 6 feet in diameter with a sloping rim about 6 inches high. These ovens are well made of clay, mixed with the ashes of the bark of a tree called caripé, and are supported on walls of mud about 2 feet high, with a large opening on one side to make a fire of logs (ARW, 337). The illustration which he furnishes, however (pl. 75 C, *b*), shows two stokeholes, thus agreeing with the present-day account of them (KG, II, 207). At a Makusi house at Nosang-Motah (lit., old woman—little) Mountain, to the east of Samarang, a Makusi village on the Brazilian side of the Ireng, I saw a large flat clay baking oven resting on six or seven blocks of clay around its circumference, and another at its center. Though many remains of such clay baking pans were observed in the Makusi, Patamona, and Arekuna areas, no others were seen in use. Clay hearths are also mentioned on the mainland by St. Clair (StC, I, 312), Crévaux (Cr, 119), and Ule (EU, 290). They have also been recorded from the islands (RO, 508).

363. More than a century and a half ago the iron plate for baking cassava constituted an article of barter, in conjunction with several other articles, for Indian slaves in Cayenne (PBA, 108).

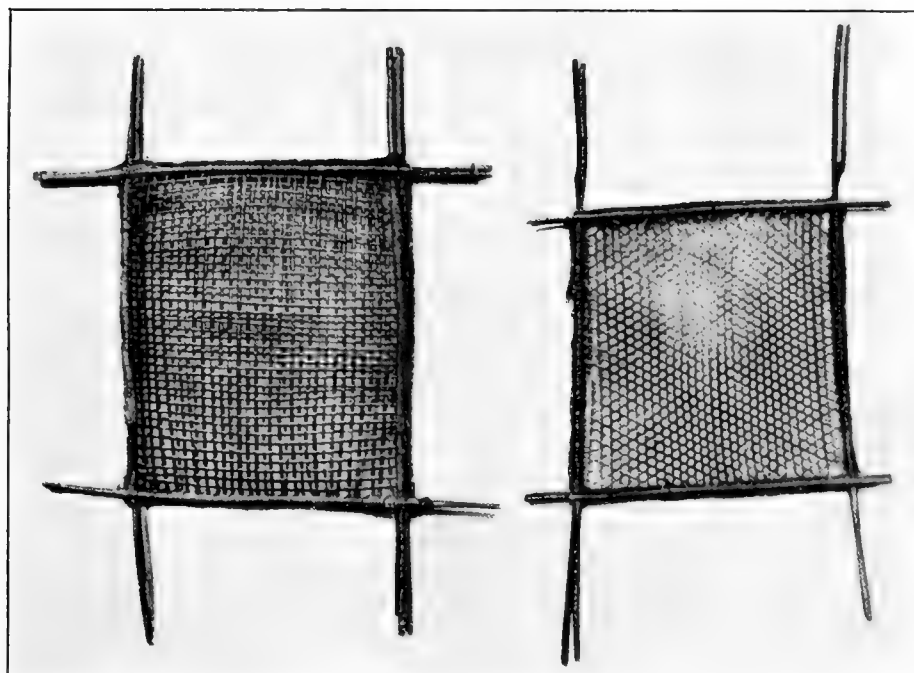
364. On the upper Orinoco and Guaviar Rivers Crévaux states that the Mitoua commence cooking operations by disposing in a triangle three stones between which they place their firebrands, thus serving as a tripod for their utensils, and forming galleries for currents of air (Cr, 514). Schomburgk similarly relates how the Makusi on the Rupununi boil their pots over three stones like a tripod (SR, I, 360). It was Wallace who first mentioned the set of three clay cylinders (pl. 75 B; C, *c*) for supporting cooking utensils among the Uaupes River Indians (ARW, 350). On the Pomeroun, Moruca, etc., all Arawak, Carib, and Warrau have their pots, cassava grids, etc., resting on three irons, usually the upturned handles of discarded or broken cutlasses. To keep the fire "in," the pieces of firewood are laid so as to converge and meet at the center of the hearth. As their ends become gradually consumed, the fuel is proportionately pushed more and more toward the center (pl. 76).

365. For smoothing and leveling the cassava "cake" while on the grid, and thus insuring its uniform thickness, Arawak, Carib, Makusi, etc., employ a wooden implement with a handle, much after the style of a flatiron (pl. 77). It is known as hessu to the Arawak, among whom, on the Pomeroun, as is the case with the Carib, it is now almost obsolete, its purpose being effected with the edge of the fan which the woman invariably has by her to keep the fire aflame.

366. Distinct shapes of fans appear among certain of the tribes, as the shovel-shaped (Arawak) and the rectangular (Carib, Aka-

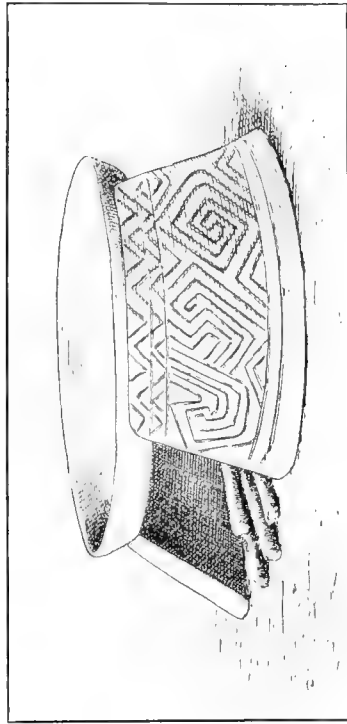


A, Sifting cassava. (After J. Ogilvie.)

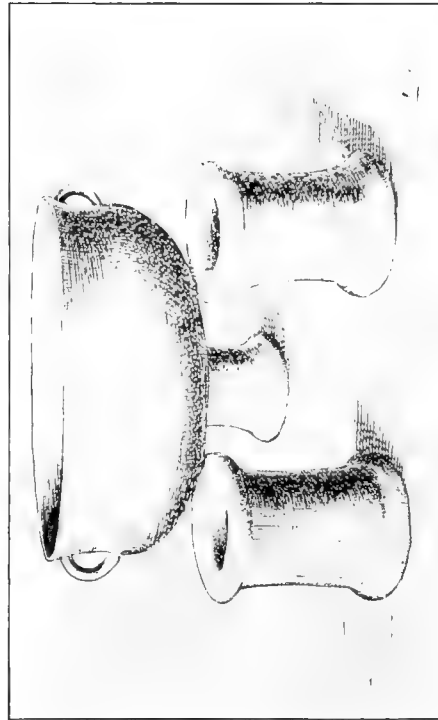


B, Cassava sifters of the upper Rio Negro. (After Koch-Grünberg.)

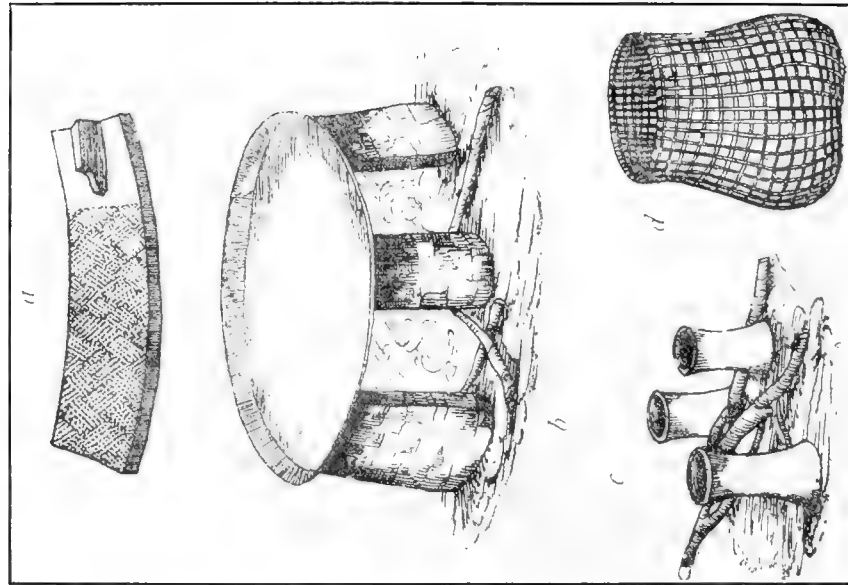
CASSAVA SIFTING AND SIFTERS



A



B



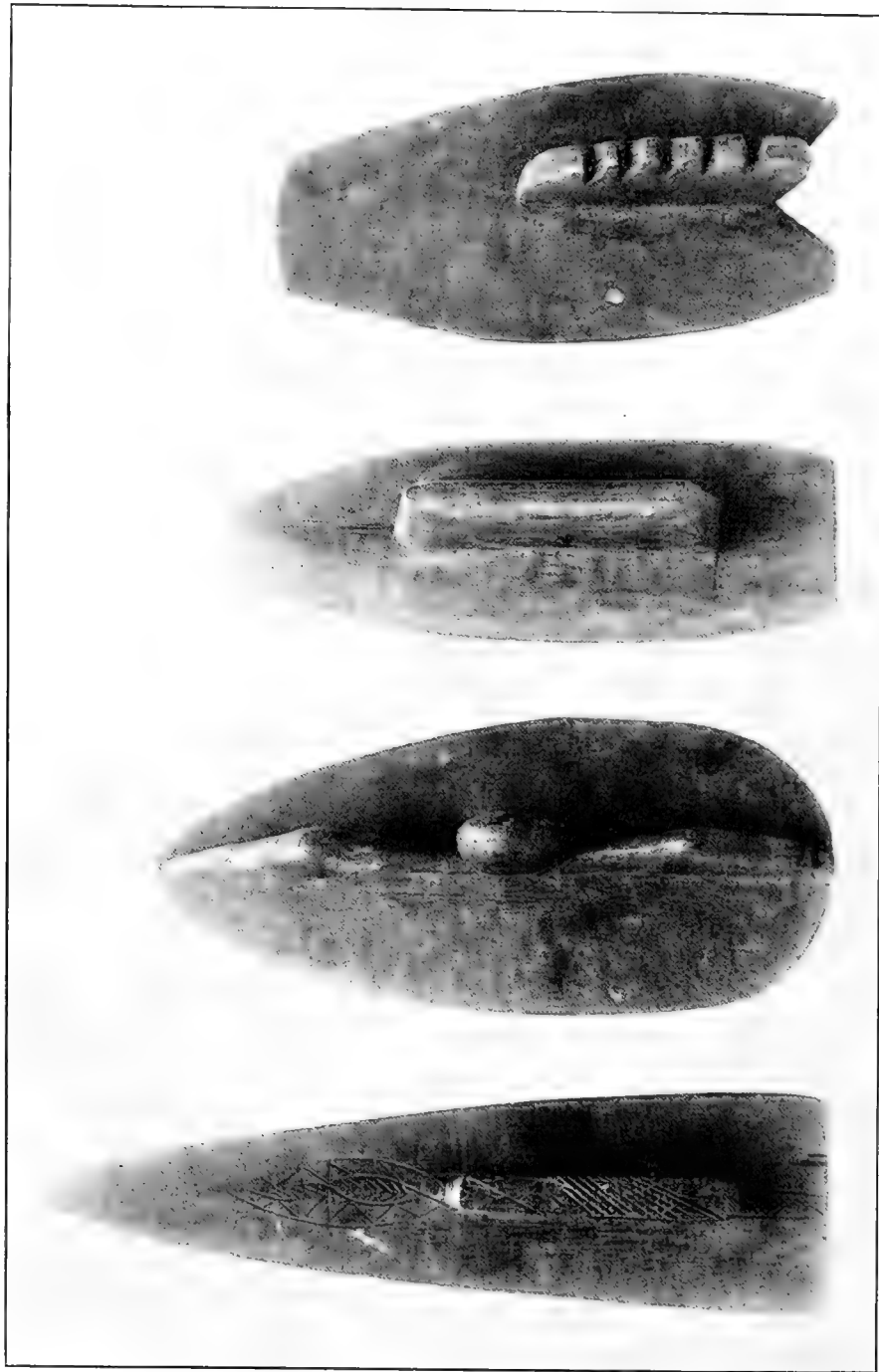
BAKING APPARATUS, GRIDS, ETC.

A, Incised pattern baking hearth. (After Koch-Grünberg.) B, Cooking vessel supported on clay cylinders. (After Koch-Grünberg.) C, Uaupes River district articles; a, Mandioca grater; b, oven; c, fireplace; d, basket. (After A. R. Wallace.)



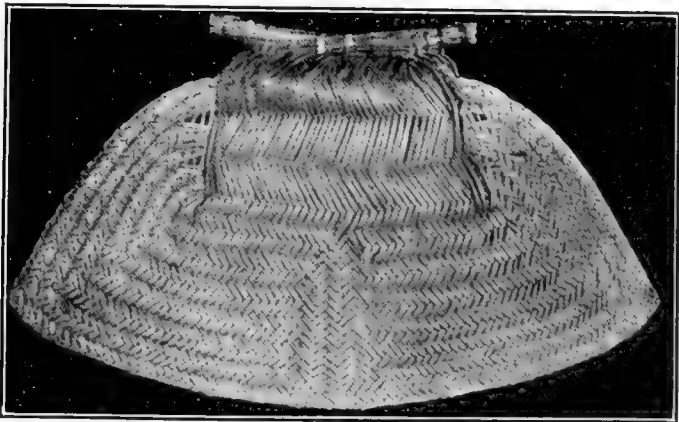
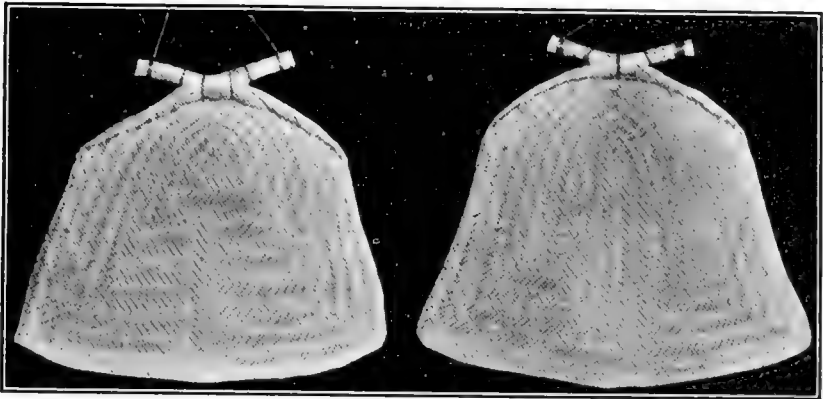
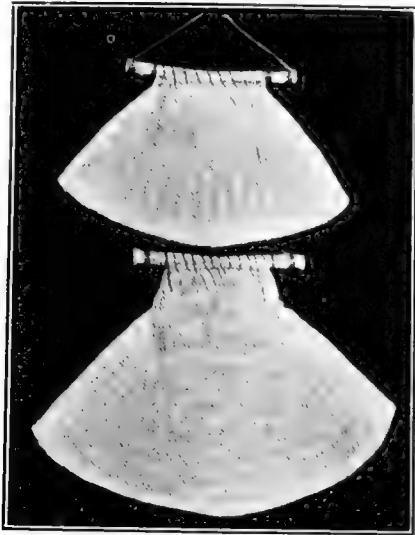
INTERIOR VIEW OF A MAKUSI DWELLING

Note the baking hearth of three clay or stone supports, with the convergent fire sticks; the pestle and mortar, the water vessel; the large squat, and at the side, and behind it a knapsack, etc. The wall is a wattling, in the interspaces of which wet clay will subsequently be fixed. (From Univ. of Penna. Mus. Journal, Vol. VI, No. 1.)



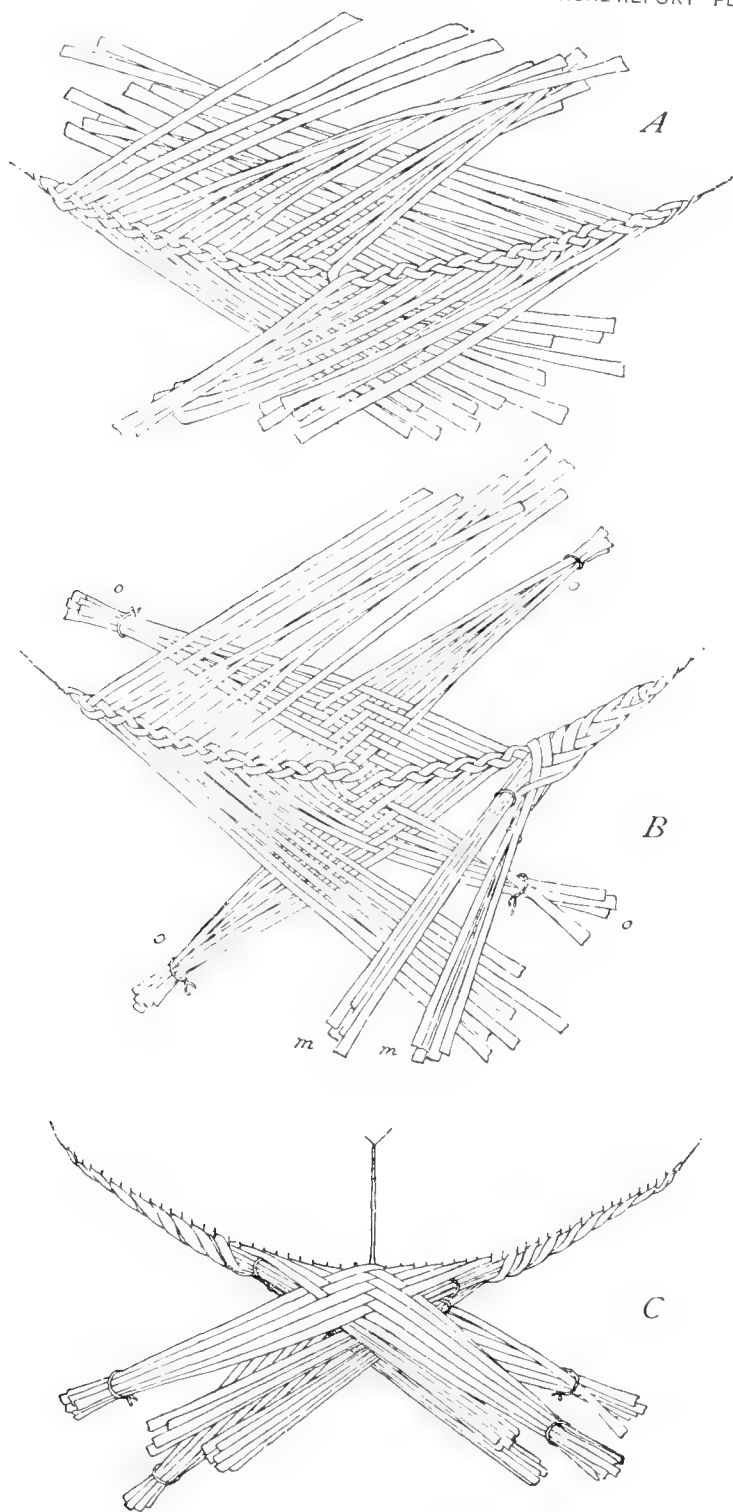
VARIOUS FORMS OF CASSAVA "SMOOTHER"

The one on the extreme left is Makusi; the remainder are believed to be Akawai, Warau, and Arawak, respectively.



C
THE ARAWAK FAN

A, Sawfish; *B*, wishbone; *C*, *D*, *E*, sting-ray gill patterns.



MANUFACTURE OF ARAWAK FAN: SAWFISH AND
WISHBONE PATTERNS. (After Roth.)

[To render the diagram clearer, the blade itself is not represented.]

wai), the shape depending, of course, upon the technique of the plaitwork. A heart-shaped one comes from the Caiary-Uaupes River (KG, II, 208). Among some of their names are warri-warri (Arawak), oriwa (Makusi), awarribé (Wapishana). They are made from the pinnæ of the unexpanded leaves of the *Astrocaryum*, and by Carib, Patamona, etc., from split itiriti. Fans are invariably plaited by the men, though only employed by women, and then only for fanning the fire and for smoothing and turning over the cassava cake on the grid. There is an Arawak belief that were a woman to use one on herself she would gradually lose flesh and waste away. Duff speaks of another type of fan, apparently from the Berbice, which, even if manufactured by the native Indians, is undoubtedly an imitation of the kind introduced by coolie and Chinese immigrants. This fan is made by cutting off the ribs of the young leaf of the ite palm (*Mauritia flexuosa*) at a certain distance from the center stalk so as to form it into nearly a circle. The strong rib of an old leaf is then formed into a circle by fastening the ends of it into the midrib or leafstalk and then twisting the outer edges of the young leaf, previously cut to the proper length, to suit the intended size of the fan. As the edges are twisted around the old rib they are tightly fastened with a very small thread of the tisisiri (ite fiber). The center or footstalk of the leaf serves for a handle to the fan (DF, 59).

367. Arawak fan (WER, II).—The three designs found are the baiyari-shiri (pl. 78, A), the marudi sararang (B), and the duburi kaianasanna (C, D, E), of which the respective English equivalents are "fish-comb" (i. e., the snout of the sawfish), marudi bone (i. e., the "wishbone" of the Penelope), and sting-ray gills. The sawfish and wishbone patterns are also found among the Makusi, Wapishana, etc. The latter is also apparently made by the Trio (GOE, pl. VIII, fig. 9). There are at least three variations in the third design.

Terms: For descriptive purposes an Arawak fan may be regarded as composed of a blade and handle, the former consisting of a body and two wings (fig. 89, A, *w*). The body is made up of a foundation (*a*), a superstructure or substructure (*b*, *c*, according to the pattern), and two gables (*d*). Made by men.

Arawak nomenclature: The two halves of the handle are the tajiike (ears), that portion of the blade in its immediate neighborhood is the tishi (head), its opposite edge the tishi-hudi, the lateral edges taramakondi, the front or upper surface tajakó-mária, and its back or lower surface tabong-mária.

The initial procedure will vary with the design introduced on the blade, the only constancy prevailing being that, after the strands of split *Astrocaryum* have been arranged, with their points all in

one direction, the plait commences not at their respective centers (as in the cassava squeezers) but at a spot distant about a third of their lengths from the wider or butt (proximal) ends.

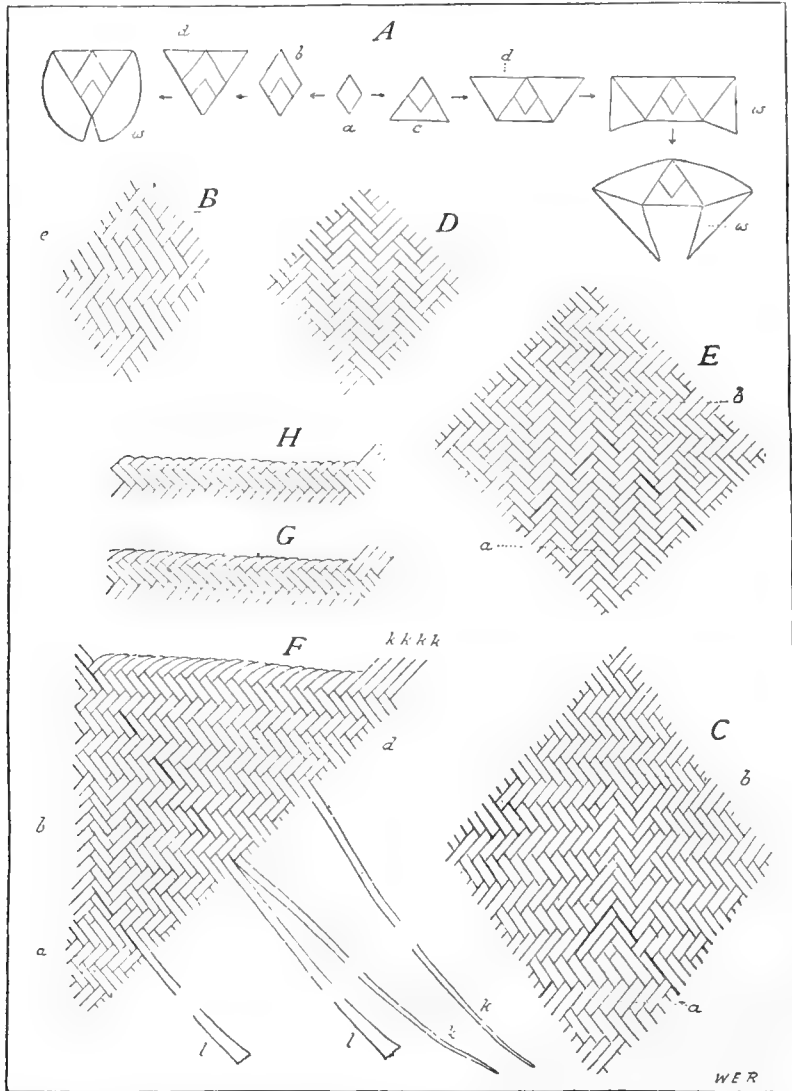


FIG. 89.—Manufacture of Arawak fan, sawfish and wishbone patterns. Starting from the central diamond in A, the gradual evolution of the sawfish and wishbone patterns is shown passing to the left, that of the sting-ray gill pattern to the right.

368. The manufacture of the sawfish and wishbone patterns.—Foundation and superstructure: So far as the technique is concerned, these two patterns differ from one another only in their foundation and superstructure, and hence may be conveniently described

together. With the sawfish the foundation is made by plaiting one set of nine strands more or less diagonally into another series of nine, according to the diamond arrangement illustrated (fig. 89 B), where will be observed the small central spot of exposed strand which the Indians call the eye (*e*). The superstructure (C) is formed by plaiting 15 or 16 additional strands into the upper edges of the diamond, care being taken that, whatever be the number plaited along the one edge, a similar number must be worked on the other; absence of such provision renders the article askew and will ultimately prevent it fitting properly below. In the wishbone variety 12 strands are employed in the foundation (D), while another 11 or 12 may be added on either side to form the superstructure (E).

369. Gable: On completion of the superstructure the strands projecting from its upper lateral half are plaited into one another to form the gable (fig. 89 F), in such a manner that as each successive strand, starting from the apex of the superstructure, reaches the line which will ultimately limit the top edge of the blade, it is bent backward, outward, and downward so as to underlie three or two (G) others before rejoining the plait. Of course, when the bent strand underlies three others, the edge of the article will be much stronger than with only two, and hence the former arrangement is usually met in the fans employed for everyday Indian domestic work; on the other hand, in the specimens made for purposes of trade, etc., each bent strand may underlie but one other (H). This bending and plaiting process proceeds until four strands remain at the top outer corner, provided three strands have been underlapped at each bending. Three or two must, however, remain if two or one, respectively, have been underlapped. The piece of plaiting being now reversed, the other gable is built in similar manner, and, with it, the body of the blade is finished. It will be noticed (F) that the strands projecting from the gable portions of the body's two sides are all formed of the tapering (distal) extremities (*k*), while those from the foundation and superstructure are composed of the butt (proximal) ends (*l*).

370. Wing: Starting, then, on each side with the innermost of the four strands projecting from the upper corners of the body, these are bent, passed under the three remaining, and plaited parallel with the side of the body (by means of the usual underlapping and overlapping of three at a time) until they reach the lower angle of the foundation, between the two innermost butts where they cross (fig. 90 A), the distal extremity of the one strand being finally tucked under and along the corresponding extremity of the other. (It should be noted that the size and method of construction of the fan are so adapted to the length of the leaf from which the strand is

derived that they just allow of this arrangement being made.) The process is repeated with the next two corresponding strands, and so on until all the distal extremities of the strands projecting from the gable portion of the body's sides have been plaited and tucked out of the way to constitute the two wings (B).

371. Handle: The making of a handle out of the remaining proximal ends of the strands projecting below the blade is next proceeded

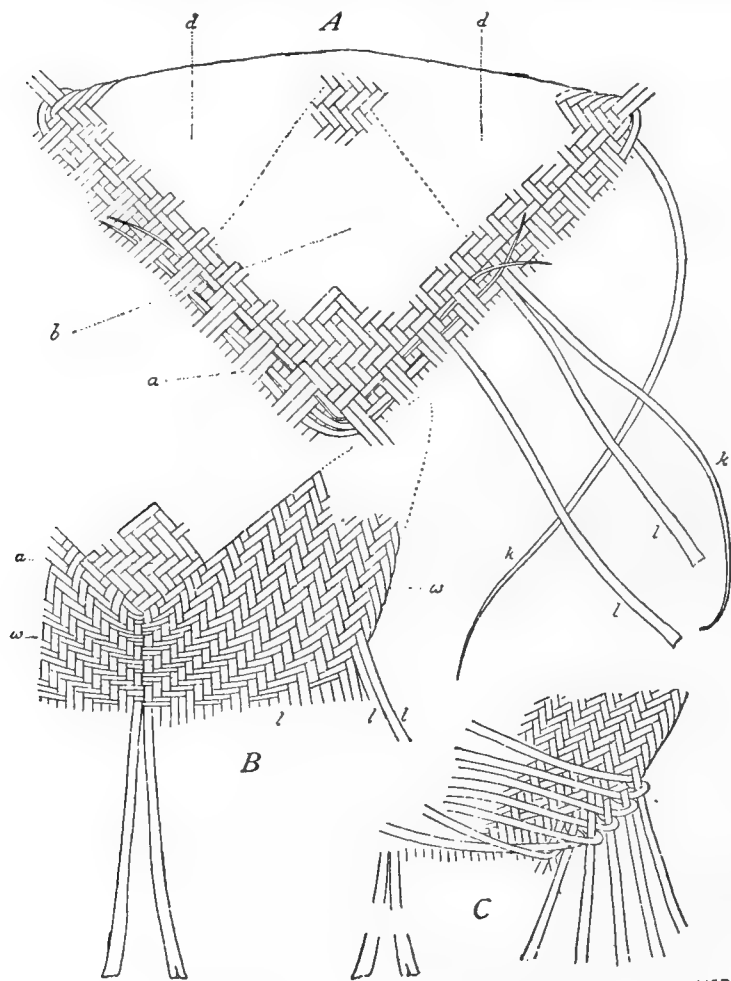


FIG. 90.—Manufacture of Arawak fan—sawfish and wishbone patterns.

with. Starting with the outermost, these are bent upward, successively and alternately one over the other (fig. 90 C), until the innermost butt is reached, each newly bent strand thus helping to keep in position the one immediately behind. As a result, half the strands project more or less at an angle from the one surface of the

blade and half from the other, thus constituting a set of two contiguous groups. After repeating the process with the butts projecting from the other half of the blade, another set of two contiguous groups of strands is obtained (pl. 79 A). The outer components of each two contiguous groups are next bent upward as before, successively and alternately one over the other, and their extremities tied into two bundles (*B, m m*). The inner components, however, of the one set of two contiguous groups are plaited after the usual manner into the corresponding strands in the other set (*o, o*), this plait with its projecting strands ultimately forming the outer covering of the four bundles which have been tucked up underneath (*C*). All these bundles are now lumped together and tied to constitute the handle. In the sawfish and wishbone patterns of fan, a flat pencil of wood may be passed from below through the plait in between the innermost butts into the lower portion of the foundation (pl. 78 B). The Indians say that, though this addition may increase the strength of the lower portion of the blade, it will tend to weaken it beyond.

372. The manufacture of the "sting-ray gill" pattern.—Foundation and substructure: In the sting-ray fan the foundation is made by plaiting 13 strands into 13 (pl. 80 A), the pattern so produced being identical with a limited portion of the design introduced into the superstructure of the sawfish and wishbone varieties. This is the locally orthodox Arawak pattern, but what are described as more easily constructed variations (*B, C*) are manufactured. Such completed articles are shown, respectively, in plate 78 D and E. The substructure is obtained by adding a varying number of strands parallel with the lower edges of this diamond, an equal number on each side, and plaiting in such a manner (pl. 80 D) that projecting below are two series of butt ends, the one series lying on the other.

373. Gable, wing: Gables (*d*) and wings (*w*) are next successively constructed (pl. 80 E) on the same lines as with the other fans, the only real difference being that the distal portions of the strands that have collectively formed the wings are not plaited into any of the butts, but are left free to be roughly divided into three equal bundles (*p, p, p*). The three bundles from either side are then together tucked into and covered by the compartments formed by regularly crossing the upper and under series of butt ends three times, the only exception to this regularity being with the three outermost strands on opposite surfaces of the blade, where the bundles commence to be hidden (*F*). The next thing is carefully and successively to pull on the projecting extremities of the bundles and three outermost butts in the proper direction suitable for enabling the lower angle of each wing to be dragged more and more toward the center.

374. Handle: When this angle on each side reaches within cover of the butts, the latter are suitably arranged and tied to constitute a handle (pl. 80 F, *t*, *t*). The projecting extremities of the bundles (*p*, *p*, *p*) are finally cut off flush where they emerge from cover.

375. The manufacture of the Carib fan.—This is of a rectangular shape (fig. 91 A, B, C), the width exceeding the height, of a

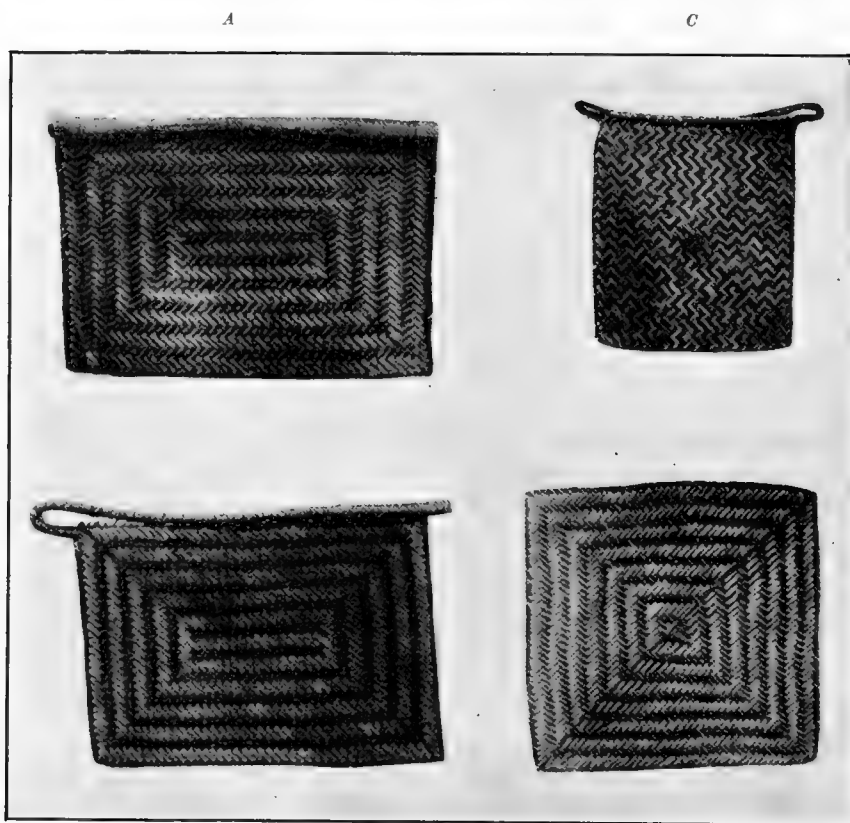
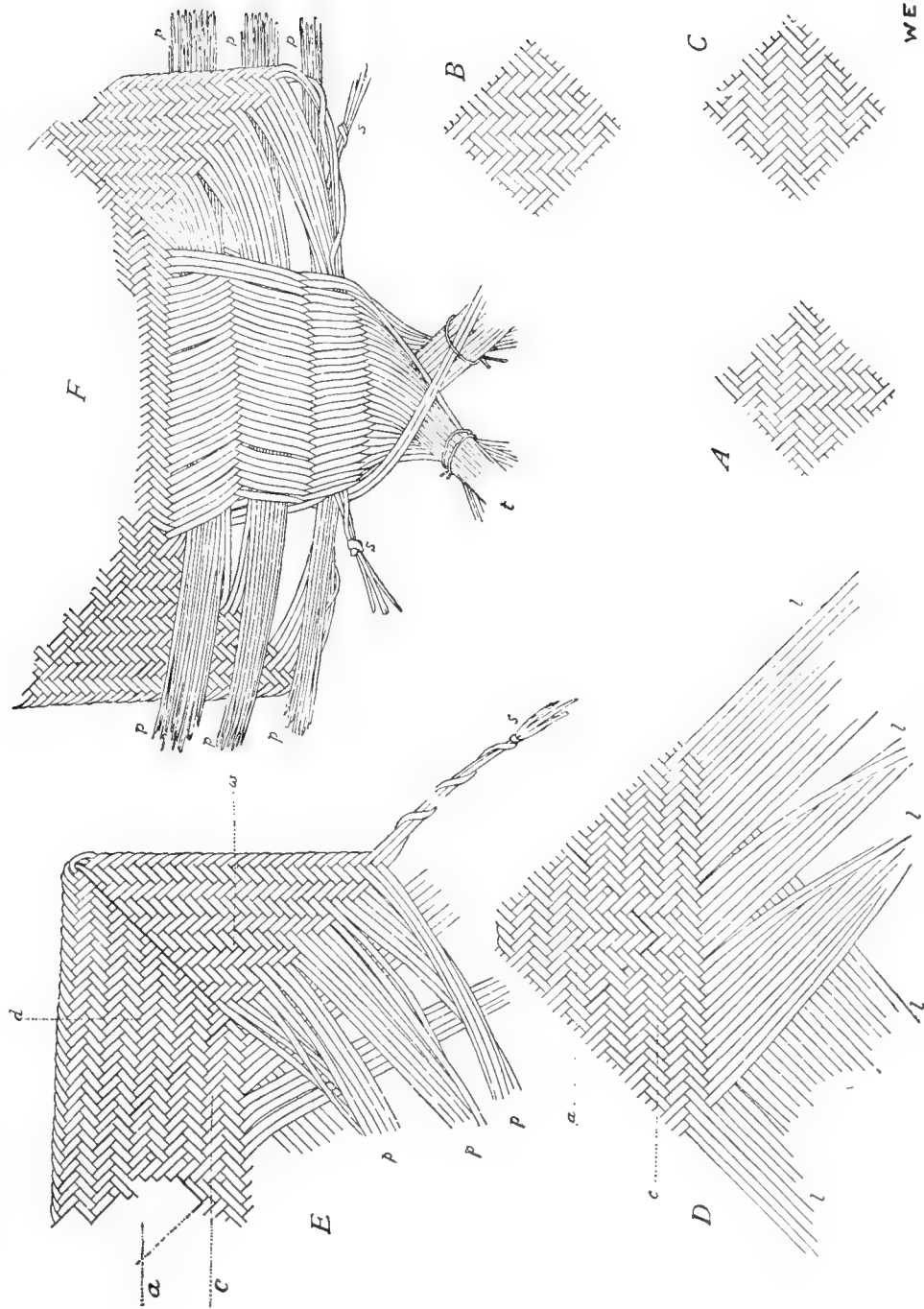


FIG. 91.—Carib (A, B, C) and Akawai (D) fans.

pattern composed of concentric rectangles, with or without a central grille, and made of split itiriti. Except for market purposes (i. e., for sale or barter to outsiders), the ratio of width to height is constant and the strands are not dyed. It is built upon the usual diamond foundation (pl. 81, fig. 1 A, *a*) with gables (*d*), wings (*w*), and a substructure (*c*), terms for which the explanations have already been given. The foundation (B) is formed of a varying number of horizontal rows, in herringbone fashion, according to the size required, the upper angle of the diamond limiting the upper edge of the finished article. The two lowermost strands (*e*, *f*) play an



MANUFACTURE OF ARAWAK FAN, STING-RAY GILL PATTERN. (After Roth.)
Foundation, orthodox (*A*) and unorthodox (*B*, *C*); substructure (*D*); formation of gable with wing (*E*) and handle (*F*).

WER

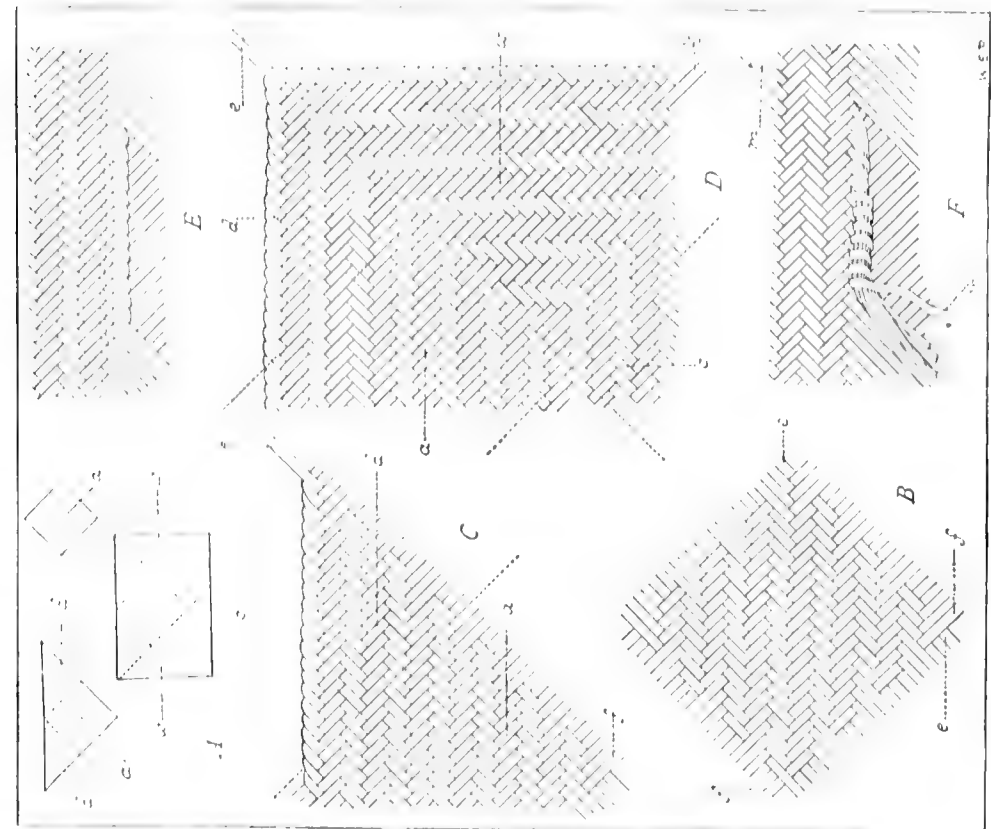


FIG. 1.—Manufacture of Carib fan. Gradual evolution from the central diamond (A); the foundation (B); gable (C); wing (D); methods of trimming off the free edge (E, F).

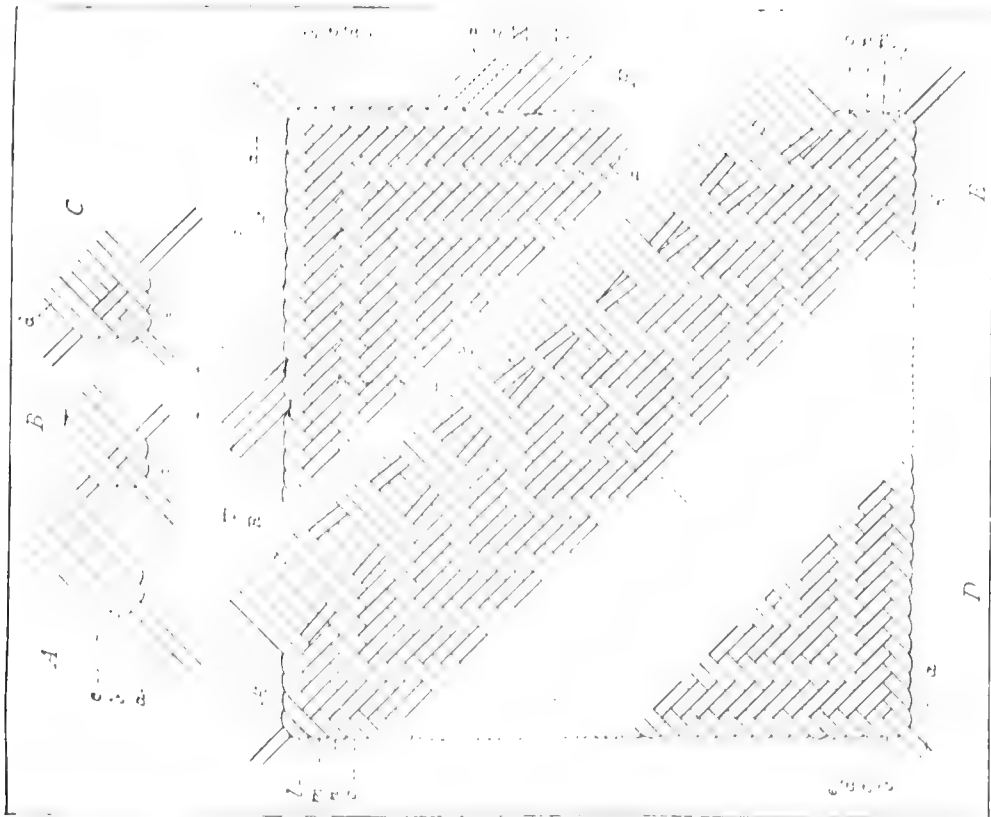


FIG. 2.—Manufacture of the Akawai fan.

important part, as will subsequently be shown, in the stability of the fan. The next process is the manufacture of the gables (C), a start being made at the upper angle of the foundation and "breaking" one strand after another, each being started on its journey by passing under two. This goes on until the lowermost strands of the diamond (*e, f*) are reached, the latter being left free and projecting. The wings are now formed by similar procedure (D), the second wing in the course of manufacture completing the triangular sub-structure (*e*). The base level to which the wings are built depends upon the caprice of the maker. The two projecting strands, which might almost be regarded as diagonals, are next bent back on to and along themselves in and between the strands through which they have already passed; they thus serve to tighten up the plaits and act as stays. Indeed, it is with the same object that the last strand (*k*) to be "broken" at the lower corner of the edge of the wing is dealt with in similar fashion. There are two methods adopted in "finishing off"—i. e., in preventing the fraying of the lower edge. The first and easier (E) is to take up on each face one strand at a time, and then, after "breaking," to pass it under its two immediate neighbors and cut it. These cut ends are next covered with the two halves of a split wooden pencil, which are laid along the lower edges of each side and tightly sewn on to it in three places with waxed kuraua fiber. The second method (F) is to insert one extremity of a long strip of mamuri (*m*) into the lower portion of the body of the fan and, as it emerges below, to coil it over and around a bundle of some three or four strands in front and behind. This process of overcasting is continued around the lower edge on both sides of the article by taking up a new strand with every turn of the coil and cutting off the extreme ends of the projecting strands when the bundle composing them appears to be getting too thick and unwieldy. These variations are photographed in figure 91 A and B, respectively. C is also a Carib fan, made for trade purposes, but its identity of pattern is hidden by the staining of some of the strands (WER, iv). It is true that in the Pomeroon and Moruca River areas the Warrau make fans identical with those of the Carib, from whom they have probably learned the art. Similar ones are also manufactured by Areakuna, Patamona, Oyana (GOE, pl. viii, fig. 5), and other tribes.

376. The manufacture of the Akawai fan (WER, iv).—The Akawai fan (fig. 91 D) is of a square shape, designed, so far as the Pomeroon district is concerned, of a uniform pattern of a series of concentric squares, but manufactured on a different principle to all the others in that a commencement is made at the left lower corner,

whence the article is gradually built up, strand by strand. The material used is the same split itiriti, not usually dyed. The edges of the fan may be described as upper, lower, left, and right. Starting with a center strand (pl. 81, fig. 2 A, *a*), which will ultimately constitute one of the diagonals of the square, this is laid on the flat, and two others (*b*, *c*), "broken" at their middle, are placed behind it, one of them a strand's breadth ahead of the other. A third (*d*) is now added (B) at right angles to the diagonal, and then (C) a fourth (*e*) over which the third is "broken." A fifth and sixth is next put in, and so on, as is required for the pattern (D), the preceding strand being always broken over the last one inserted. The process is thus repeated over and over again (E) according to the size of article to be manufactured, until the second diagonal (K) is put in place, this strand, like the first diagonal, being left free at the ends. The three or four immediately preceding strands (*l*, *m*, *n*, *o*), which have already been broken along the lower and the left edges, are now again similarly treated to form the upper and right edges on passing beyond the second diagonal. A peculiarity in the arrangement of these three or four strands is that their extremities are plaited in and between identical projecting strands, so as to lie in close opposition one behind the other. The object of this is to tighten up and fix the portion already manufactured, and hence to act as a stay. Furthermore, by looking out for this thickened portion of the fan, one can always tell at which corner the plaiting has been commenced. Beyond these three or four strands, thus doubled and tucked in upon themselves, yet another variation in the plaiting is adopted (F), which may be described as follows: Each strand is cut short, alternately and successively, at a spot limited by the right (*v*, *x*) and upper (*r*, *t*) edge of the fan, respectively. The longer extremity (R, T, V, X) is then broken over its shorter-cut end, whence, passing along and covering it according to the design of the pattern, it is pushed under a set of three strands and cut close (*w*, *y*, *z*). The projecting ends of the two diagonals are finally tucked back on to and along themselves, and thus act as stays, like the three or four central ones mentioned above. Similarly constructed fans are met among the Patamona and Arekuna, by whom the larger varieties are used as mats (sec. 395).

377. Drinking trough.—A very common article of household furniture is the "paiwarri" trough, often of a size sufficient to hold several dozen gallons of drink. Though sometimes replaced by a discarded corial, it is usually manufactured from a tree trunk on identical lines, carved and painted (ScG, 245), even with numerous figures (SR, II, 221). Whatever the shape (fig. 92), the ends are very commonly specialized into handles, to allow of its removal from

one portion of the premises to another. On the Hibibia Creek, Demerara River, a trough was to be seen formed out of a section of tree trunk, with the rough representation of an alligator's head and tail carved at the respective ends. From Waterton's statement that in each hamlet there is a large tree hollowed out like a trough (W, 222), it is possible that occasionally the one paiwarri trough may have been common to the settlement. The Arawak name for the vessel is *atau-ekke*. The Warrau call it *dau-au-rúa*, after the timber out of which it is cut.

378. Stirring paddle.—For stirring up the brew in the course of manufacture of their native drinks, use is made of a spatulate, or often paddle-shaped thin stick, from 1 to 2½ feet long, often artistically carved and decorated. In addition to the ordinary spatulate form on the upper Rio Negro (KG, II, 209), an exceptional spoon-

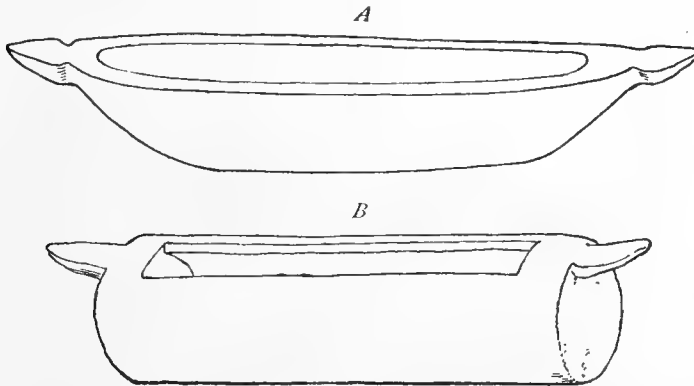


FIG. 92.—Examples of drinking troughs. A, Warrau; B, Akawai.

shaped article with handlike carved handle has been described (KG, I, 111). Similarly, Crévaux figures a "spoon" made from the occiput of a *couata* monkey, fixed with thread to a wooden handle, from the Apalai of the Parou River, Cayenne (Cr, 302).

379. Brooms.—The *manicol* produces neither flowers nor nuts, but a spathe which arises near the top and divides into 20 or 30 uneven wooden cords or fibers. These are here called brooms, for which they are used (BA, 64). This is still the case, the women employing them for sweeping the earthen floors. An *ite* leaf, plaited into shape, often takes the place of a dust shovel in connection with this form of broom.

380. The pestle and mortar employed for pounding maize, plantain, and various fruits, and for breaking certain of the hard-shelled edible nuts, appears in three forms. In all the Arekuna, Makusi, Patamona, and Wapishana houses is to be seen a mortar in the shape of a hardwood bole, between 2 and 3 feet long, jammed

perpendicularly into the ground, but projecting a couple of inches or so above it (fig. 93 A). Sunk into the center of the exposed surface is a circular pit, made by fire and scraping, of a diameter of about 3 to 5 inches and a depth of 15 or 16 inches, with the bottom flat. The pounder in these districts is a heavy hardwood pole from 8 to 10 feet long, with a tapering truncated extremity (B). It is not used as a stamper, but rather as a grinder with a to-and-fro, hardly oval, but rather more or less triangular movement, crushing the corn up against the pit side during the course of its manipulation. If the occupants leave the house for a few days they will either cover the pit or fill it with clean "mud," to prevent bees,

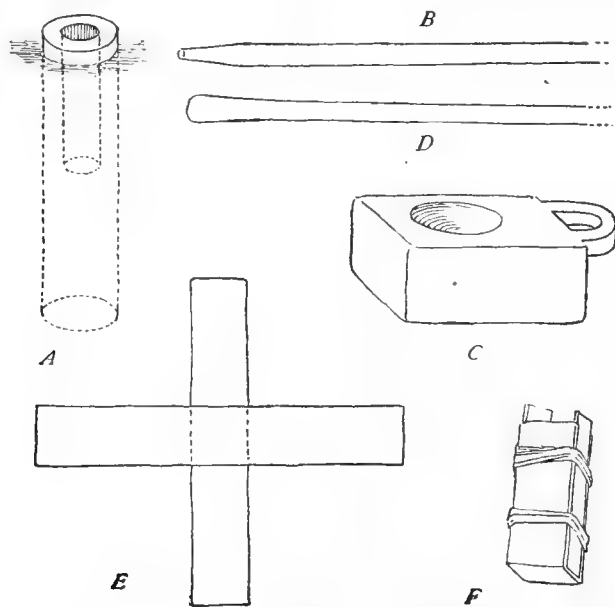


FIG. 93.—Pestles and mortars (wood and bark).

wasps, or other insects from nesting in it. Similar apparatus has been reported from the Demerara (Da, 232) and from the upper Rio Negro (KG, 1, 179). A larger variety of mortar, with a depressed upper surface, the whole not being so deeply sunk into the ground, would seem to be met with among the Makusi (pl. 76). Though the arrangement above described is occasionally to be seen, on the upper Pomeroon among the Carib and Akawai, the more common model among the Arawak throughout the Pomeroon and Moruca district is a squared piece of hardwood of about the same size, with a plainly cut handle, either in the shape of a ring or projection, carved out of one extremity, but having a semiglobular excavation cut out of one of the sides (fig. 93 C). The pestle is a long double-headed cylinder of hardwood, tapering gradually from each

extremity, where it is about 3 inches in diameter, toward the center (D); or it may be single-headed, tapering gradually down toward the handle end. In either case the head is in no sense abruptly defined.

381. The Taruma, Waiwai, etc., have a more or less temporary sort of mortar, principally for pulping up fruit, made of two lengths of bark folded one upon the other, with carefully trimmed edges, so that when bound above and below with bark strips very little fluid will pass through the interstices (fig. 93, E, F). The outer side of the bark forms the outside of the mortar. When about to be bent over the line is nicked on the bark, the cambium being left intact. The base of the article is about 4 inches square. The pestle is a piece of wood about a foot longer than the mortar (JO).

382. There is reason to believe that stone pestles and mortars employed for both pounding and grinding (pl. 82, A, B, C) have been used up to very recent times for maize and cacao (Cr, 358-359).

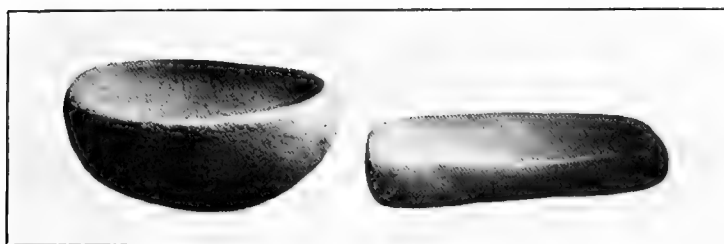
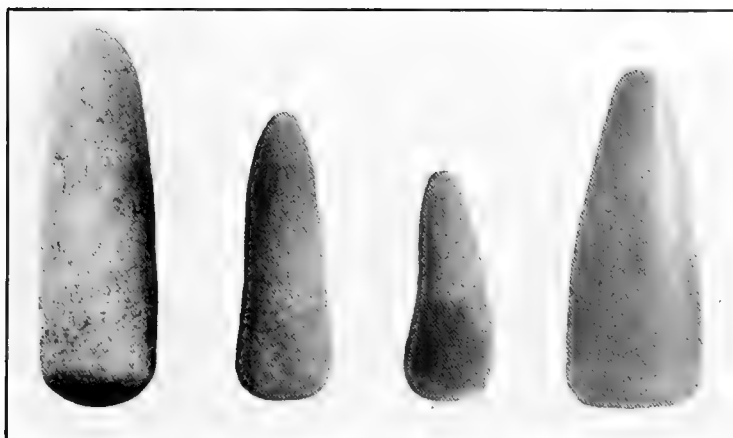
383. Sugar mill.—In Brett's day some of the Indian "places" had a rude apparatus for extracting the juice of the sugar cane, a sort of mill with small rollers being used by the more advanced. Another kind of mill which Brett saw used by the Carib was very primitive. It consisted of a thick post, the upper part of which was carved into a rude resemblance of a human bust. The cane was placed on the part answering to the collar bone, and crushed there by a long lever or staff inserted in a hole through the neck and worked by hand, the sweet juice flowing down the breast into a vessel placed to receive it (Br. 31). One of these, up to 1910, was to be seen employed on the upper Manawarin, a branch of the Moruca River; but the principle, though without its human counterfeit, is still adopted in all the present-day mills of the Arawak, Carib, and Warrau throughout the Pomeroon district (fig. 94), where fermented cane juice is a favorite drink. To better extract the juice, the cane, during the pressure exerted by the lever, is twisted in opposite directions by the assistants at each extremity (pl. 82 I). Coudreau also met with these mills among such distant tribes as the Atorai and Wapishana (Cou, II, 307).



FIG. 94.—Sketch of sugar mill without the lever.

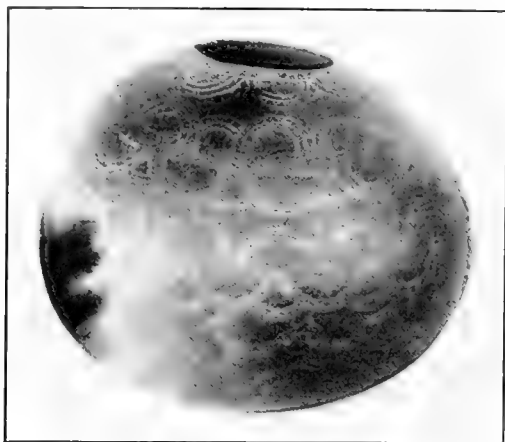
384. Gourds as water vessels (pl. 83, A, C).—Some two and a half centuries ago Rochefort described certain objects made by the Carib islanders from the calabash (e. g., dishes, spoons, basins, plates, cups, drinking vessels), which were polished and painted as delicately as possible. They were known collectively as cois or couis, a name which the authority just quoted mentions as

being identical with that applied by the Brazilians [cf. *colher*, the Portuguese word] to their own articles made of similar material (RO, 491). They were also called *cuyes* in Cayenne (PBA, 139). On the lower Amazon Bates speaks of the *cuyas*, or drinking cups, made from gourds, as being sometimes tastefully painted, and then describes how the rich black ground color is produced by a dye made from the bark of a tree called *comateü*, the gummy nature of which imparts a fine polish. The yellow tints are made with the Tabatinga clay; the red with the seeds of the urucu or anatto plant; and the blue with indigo, which is planted around the huts. The art is indigenous with the Amazonian Indians, but it is only the settled agricultural tribes belonging to the Tupi stock who practice it (HWB, 114). On the upper Rio Negro the cups are polished brown on the outside and lacquered black on the inside; while the edge or the whole exterior is ornamented with incised patterns. The lacquering is done in a curious way. The calabash, after being well smoothed on the inner surface and washed with a decoction of carayuru (*Bignonia*) leaves is turned upside down over some cassava leaves sprinkled with human urine, where it remains until such time as the inside becomes black and shiny (KG, II, 232). In Demerara grotesque figures were often carved or painted on the calabashes by the Indians (pl. 83 A). Dance makes mention of an Indian woman in Georgetown who drove a lucrative trade in this artistic embellishment (Da, 186). From the Arawak on the Corentyn St. Clair obtained several shells of calabashes of different sizes the outsides of which were stained in beautiful patterns, generally black on a white ground (StC, I, 329). In Surinam the Negroes in similar fashion made all kinds of vessels—plates, bottles, porringers—out of the calabash. Some of them would engrave the outsides, filling in the lines with chalk (FE, 194). Joest, in discussing the adaptation of natural forms in the pottery of the Surinam Indians, says that in all their (clay) water bottles (*prapi*) can be recognized the original form of the bottle gourd, which during growth can be made to assume different shapes by tying with string, etc. The calabash split lengthwise furnishes the prototype, the model, for dishes and cups (WJ, 87). Barrère also states that these calabashes can be shaped artificially during growth by squeezing with a bush-rope vine tied around them (PBA, 139). There would seem to be variations in the method of cleaning out these calabashes. With the Warrau, after a hole has been made and part of the inside has been scraped out, it is boiled for an hour or so, when the rest of the contents is easily removed. With the Makusi, when picked off the tree and the hole cut, the calabash is roasted a little over the fire,

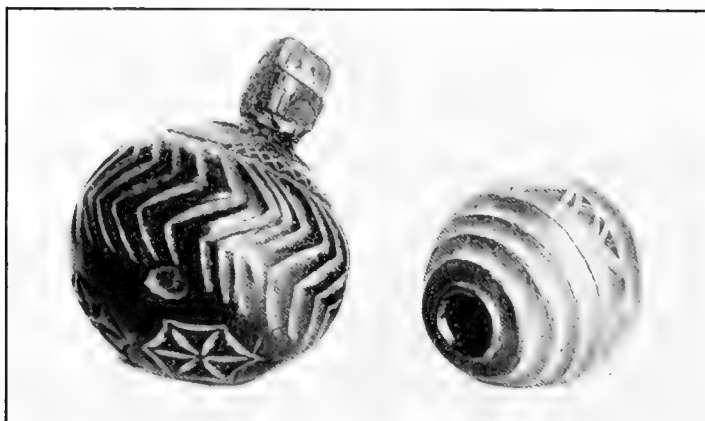
*A**H**B**C**G**D**E**F**I*

STONE MORTARS; PESTLES; CANE-SUGAR MILL

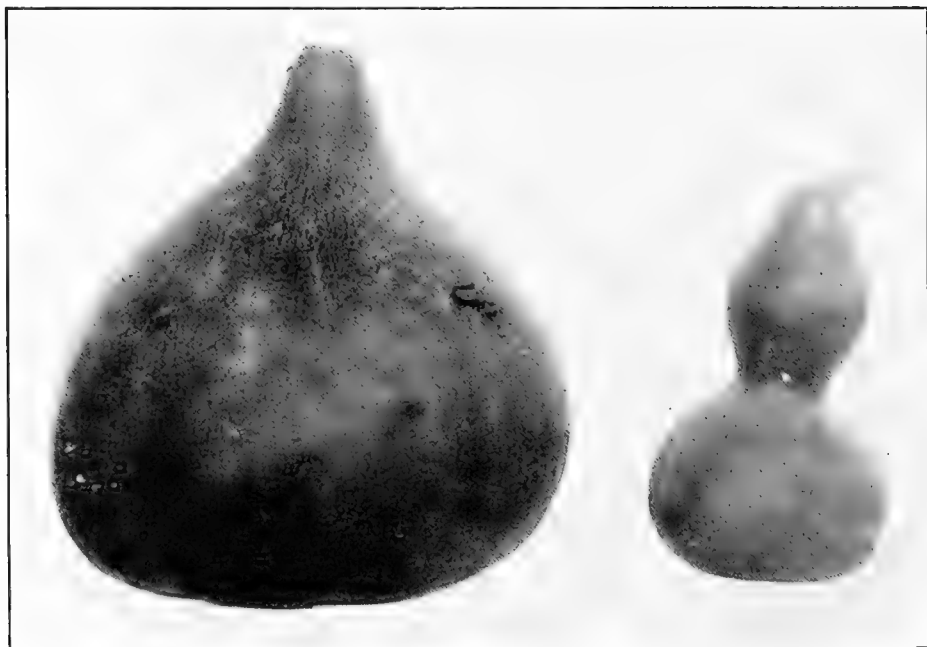
A, B, C, Types of stone mortars. Length of *C* is 475 mm. All three from Skeldon, Corentyn River. (Georgetown Museum.) *D, E, F*, Cone-shape stone pestles. *E*, 170 mm. long, comes from Sandhills, Demerara; *D* and *F* were brought from the Potaro. (Georgetown Museum.) *G, H*, Cone-shape and discoid stone pestles. *G*, 215 mm., is from Skeldon, Corentyn River; *H*, 52 mm. high and 95 mm. across, comes from the Demerara River. (Georgetown Museum.) *I*, Cane being squeezed in the sugar mill.



A, Calabash ornamented with incised patterns. Height, 420 mm. (Georgetown Museum.)



B, Carved awarra-seed boxes; that on the left with a stopper. (Georgetown Museum.)

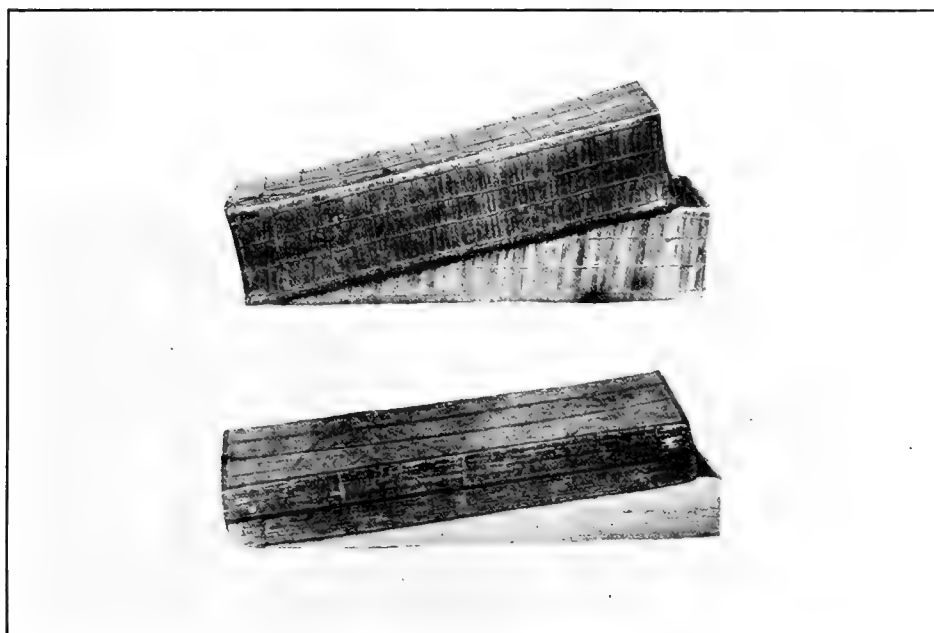


C, Gourds as water vessels. The height of the larger specimen is 450 mm. (Georgetown Museum.)

GOURDS AND SEED BOXES



A, Quill needle case.



B, Sewn palm-leaf boxes. (After Koch-Grünberg.)



C, Plaited palm-leaf boxes. (After Koch-Grünberg.)

QUILL NEEDLE CASE; PALM LEAF-STRIP BOXES



A, Patamona.



B, Makusi.

COTTON WOVEN RECTANGULAR BAGS

dried for a few days, and then soaked in water for about a week, when the inside is cleaned out with a stick or else gravel placed inside and shaken. When the larger kinds of calabash are used as water vessels a smaller hole may be made at the side of the larger aperture through which it was originally cleaned. A string is passed into this smaller one, its inner end knotted and its outer extremity tied to the center of a wooden handle. By this means it can be carried in the hand instead of on the head or in a knapsack.

385. A segment of bamboo is a common adaptation of a natural form for a box or case. Such bamboo boxes may often be used for holding paint (e. g., ruku), as on the Cuyuni (CC, 50), Rupununi (SR, 1, 428), and Pomeroun, even when in a semiliquid condition. They may also be utilized for storing fishhooks (CC, 50), and as quivers for poisoned arrow tips (SR, 1, 428). Wallace speaks of couchés, or vats, made of hollowed trees on the Uaupes (ARW, 46). The hollowed out seeds of certain palms can also be turned into boxes; e. g., that of the awarra palm for black paint (GO, 2) in Surinam, and for carrying small shot at the present time on the Essequibo and Pomeroun (pl. 83 B). That of another palm on the Tiquie, of the upper Rio Negro, is used for carayuru paint (KG, 1, 249). Small gourds can be employed for similar purposes (KG, 1, 249, 267, 290; GO, 2). Another interesting adaptation is the throat box of the howler monkey for holding paint, as observed among the Trio and Ojana (GO, 2). I have seen a Patamona woman with a needle and pin case (pl. 84 A) made from the quill of a large feather from the "negrocop" (*Mycteria*).

386. Flat, long, narrow boxes used on the Caiary-Uaupes for keeping the feather decorations and hair ornaments, etc., in, are made in the form of lids (pl. 84 B) after the shape followed in the ordinary pegall. The material is either palm leaf or tree pith (KG, 1, 296). In the former case, strips of leaf are sewn together, after the style of similar boxes made by the Waiwai.

387. Boxes of varying sizes, plaited out of palm leaf (pl. 84 C), are found on the Aiary River, where they are used for keeping beads and other kickshaws in (KG, 1, 130). The smaller varieties are identical with those to be seen among the Makusi and Wapishana, and with the play boxes made on the Moruca by Arawak and Warrau boys out of split kokerit leaf strips: these can also be made from the young leaves of the curua palm (*Attalea speciosa*) (BB, 162). Caraweru paint (sec. 28) may be packed in them. The construction of such kokerit leaf-strip boxes has been recorded (WER, v). Each box consists, pegall fashion, of two deep trays—one for the body and one for the cover—the two components being manufac-

tured on similar lines, as follows (fig. 95): Remove five septa (A, B, C, D, E) from the young, unopened leaves, trim their extremities, and cut into equal lengths. Take four of these, fold them

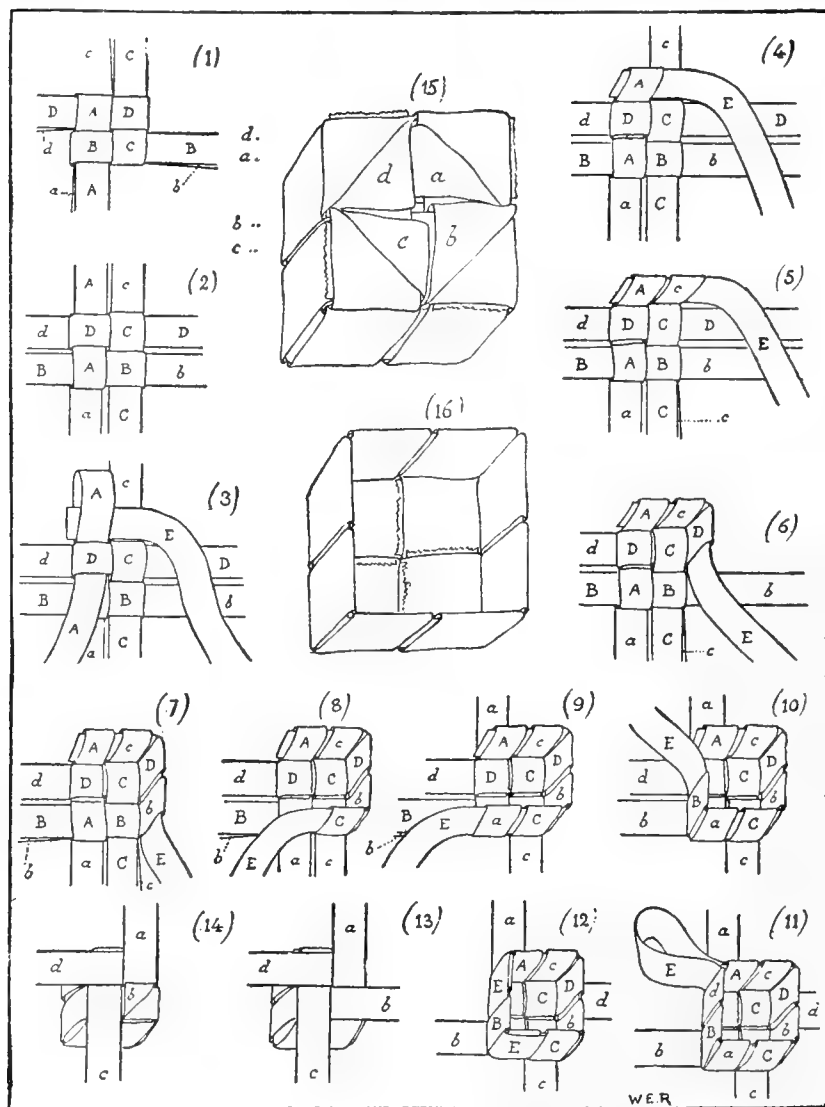


FIG. 95.—Manufacture of the kokerit leaf-strip box.

halfway, and interlock to form a square (1) with eight tails (Aa, Bb, Cc, Dd). Turn the free end of A up upon itself, then D over A, C over D, and B over C, tucking the free extremity of B under A (2). This central square will ultimately constitute the bottom of

the tray. Take the remaining septum (E), which will finally form the side of the tray, and, holding it vertically along its edge, pass A from without inward over it, and then under D (3), pulling it (E) as taut as possible, and cutting it just as it emerges from underneath D (4). Now pass *c* from within outward over E, and then into the space between itself and *d*. It will emerge behind C when it is dragged upon and temporarily left there (5). The free end of D is now folded from without inward over E, and then under C, dragged upon, and cut where it emerges (6). Then *b* is similarly passed from within outward over E and back again between itself and *c*. It will emerge behind B, where it is pulled upon and left (7). Fold C from without inward over E, then pass it under B, and cut it as it emerges (8). Now pass *a* from within outward over E and back again between itself and *b*. It will emerge behind D, where it is pulled upon and left (9). Fold B from without inward over E, and then under A, cutting it as it emerges (10). Pass *d* from within outward over E and back again between itself and *a*. It will emerge behind C, where it is pulled upon and left (11). E is next finished with, in either one of two ways—by being passed over and under (12) each successive loop (i. e., over A, under *c*, over D, under *b*, over C, under *a*, over B, under *d*), or by being passed under each successive loop (15, 16). The tray is now turned over (13). Starting with *b*, this is turned at an angle of 45° and passed from within outward under the loop formed by its strand lying immediately below. On emerging it is pulled upon and cut (14). The same thing (i. e., turning up at half a right angle, etc.) is then carried out with *a*, *d*, and *c*, and the central star on the outside of the tray thus completed (15).

388. On the extreme western boundaries of the Guianas, on the Tiquie River, use is made of a miniature bark sack for carrying the pulverized coca (KG, I, 267) or the lumps of carayuru paint (KG, I, 249). The flat rectangular jaguar-skin pouch, with an overlapping top, met with here and there (SR, II, 4) may possibly be of indigenous origin. Cotton-woven rectangular bags (pl. 85 A, B) with cover flaps are made for their men by Makusi and Patamona women on identical pattern as the chain-stitch foot ring of the Carib, etc. (sec. 49). On completion, the ring is sewn below to form the lower edge of the bag. The so-called leaf-bags (sec. 284), in which the oulin for mixing with tobacco is kept, like the pieces of bark in which the coca is preserved (sec. 287), are not really bags in the true sense of the term and do not call for further description. [Beyond the Guianas, on the Apaporis, the women knit small four-cornered purses for the men to carry their bead chains, fire apparatus, and other kickshaws

in. These are made from *astrocaryum* fiber on a bent V-shaped frame with three needles (KG, II, 289), but I do not know the process of manufacture.]

389. Clay pots, pans, water jars, etc.—As has been already mentioned, a great deal further research is required before any reliable statements can be made as to the materials, pigments, firing, varnishing, designs, etc., utilized in the potter's art; and the same remark holds equally true with the various forms assumed by these clay vessels as adopted by the different tribes. Where there has been long contact with civilizing influences, the introduction of cheap tinware and crockery has done much to destroy the native art, even sometimes to complete annihilation.

390. Among the Carib of the upper Pomeroon and Manawarin (a branch of the Moruca), people noted for their almost persistent isolation, I have found the following types:

(a) The *tomaïen*, or buck pot (pls. 86 B, *b*; 88 B) of the Creoles, also manufactured by Arawak and other tribes, is the only vessel employed for cooking purposes. It is probably the *taumali* of the Carib Islanders (RO, 491), and is of much the same shape as an ordinary cast-iron pot, and of a capacity from 3 gallons down to perhaps less than a quart. In this is made the celebrated "pepper-pot" of Guiana. A cover is made of the same material, but sufficiently broad to serve as a saucer when its contents are put to use. It is shaped something like a flattened form of the conventional Chinaman's hat.

(b) The *tokowari*, *tucuwari* (CC, 53), or goblet, with a globular body and long neck, narrowing gradually to its head, which bears hardly any lip (pl. 86 B, *a*), is used as a water cooler. Occasionally I have seen it with a pointed bottom (pl. 86 B, *c*). Now and again upon the body of the vessel there may be a ring of mammary projections. The awkward shape of neck, when narrower at its top than at the base, tending to cause it to slip out of the hand, certainly appears to be a disadvantage to the Indian. There is reason, however, for this, in that it is an imitation of the similarly shaped bottle gourd already mentioned (sec. 384). The resemblance, likewise, is still preserved in the stopper (Carib *tapu*), which is made with a curved projection on top (PEN, I, 128), but is gradually being replaced by a flat disk shaped after the style of the top of a ground glass stopper of a lady's scent bottle. More than this, half the stopper may still be a disk and the other remain a curved projection.

(c) The *sapera* or *sapura* is a somewhat flattened bowl, with a more or less inverted lip, on the two opposite sides of which is a



A, Painted vessel. Demerara, (?) Arawak. (Georgetown Museum.)

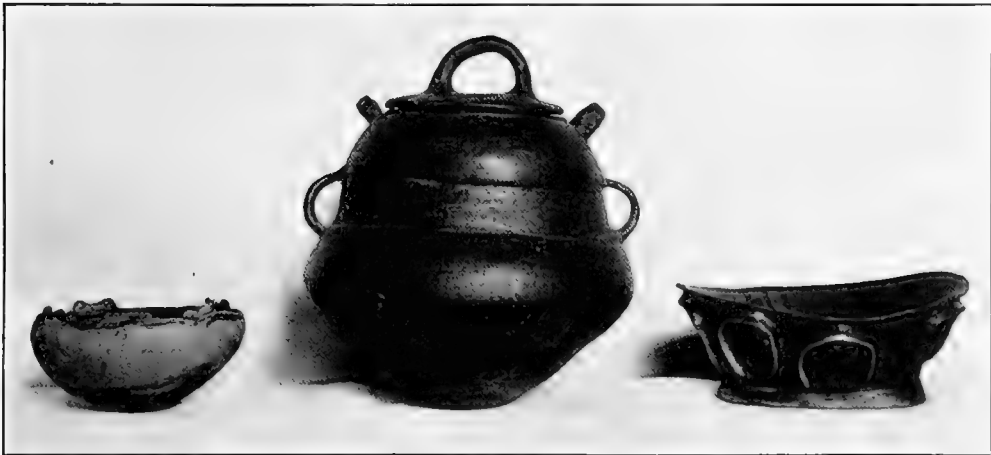


a

b

c

B



d

e

f

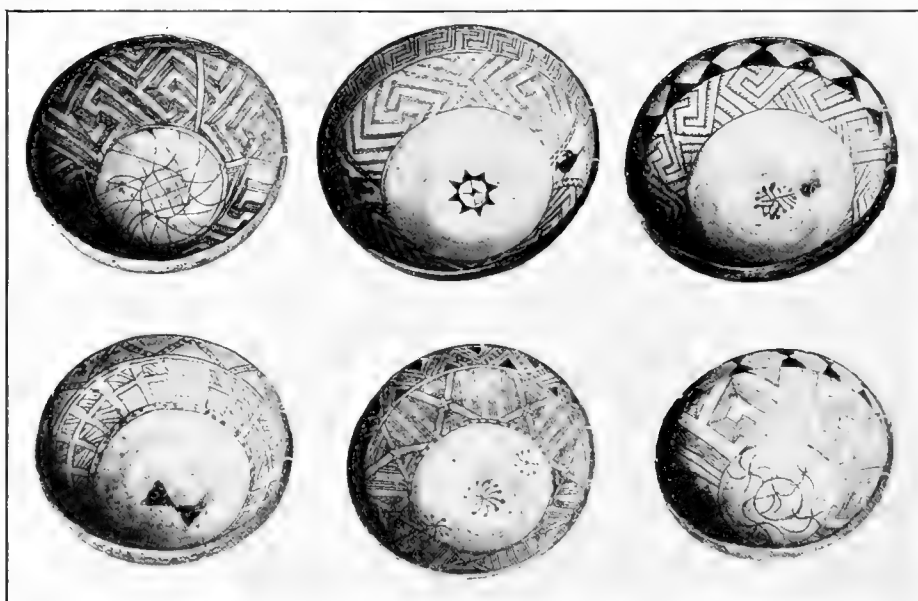
C

B, C, Domestic pottery of the Pomeroon District Carib: a, tokowari; b, tomal-en; c, tokowari; d, sapéra; e, samáko; f, parapi. (Bankfield Museum, Halifax, England.)

POTTERY FROM THE DEMERARA AND POMEROON RIVERS

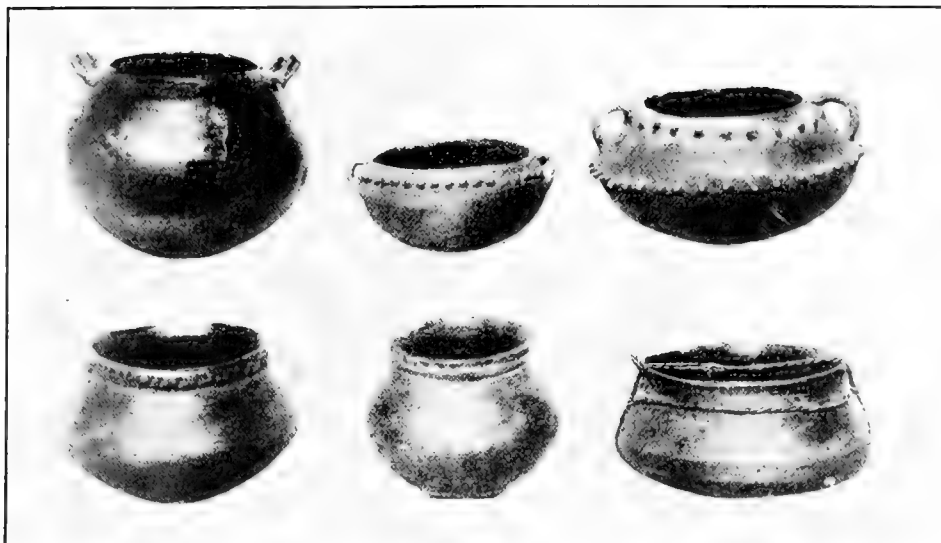


A, Painted clay water vessels from the upper Rio Negro. Arawak tribes. (After Koch-Grünberg.)



B, Painted clay bowls from upper Rio Negro. Arawak tribes. (After Koch-Grünberg.)

ARAWAK DECORATED POTTERY



A, Clay cooking pots from upper Rio Negro Arawak tribes. (After Koch-Grünberg.)

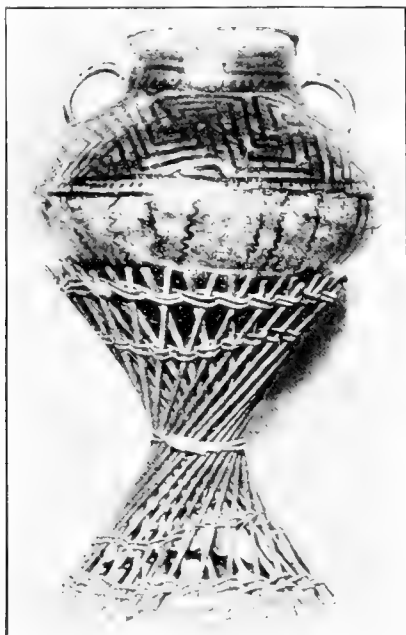


B, A common form of "buck-pot." (Georgetown Museum.)

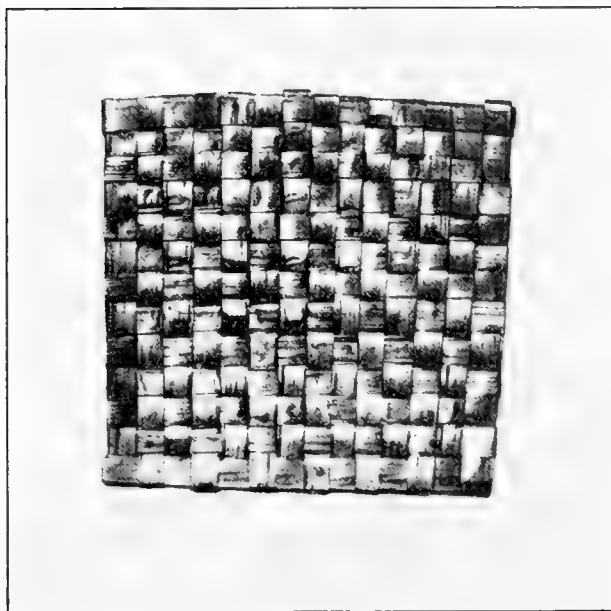


C, An unusual form of cassiri jar. Height, 400 mm. (Georgetown Museum.)

DECORATED AND PLAIN POTTERY



A Pot stand from the Aiaru River. (After Koch-Grünberg.)



B, Checker pattern mat with no special edging. (After Koch-Grünberg.)

POT STAND AND MAT

small elevation (pl. 86 C, *d*), perhaps the remnant of a handle (pl. 88 A). For holding food.

(*d*) The parapi, prapi, or basin, as compared with the preceding, has an everted edge (pl. 86 C, *f*).

(*e*) The samáko, or water jar, with handles, bulging cover, and neck, has quite a characteristic appearance (pl. 86 C, *e*).

(*f*) The large cassiri jar, with pointed or flat base, well-marked neck, and everted lips (pls. 21 A, B; 88 C; fig. 185 B, C).

391. In marked contrast with these comparatively crude designs, some beautiful Arawak models of water jars and bowls have



FIG. 96.—Twin earthen pot. (Bankfield Museum, Halifax, England.)

been figured (pl. 87) from the upper Rio Negro (KG, II, 228). Fancy work is not wanting. For instance, among the Surinam Carib two (fig. 96), three, or four water coolers may be joined together. These, however, are not used much, because a cockroach, etc., that once gets in can not be so easily removed (PEN, I, 128). Furthermore, these same people also make oval-shaped forms, others again resembling animals, birds (sec. 96), frogs, etc.

392. Pot stands, head pads.—On the Aiary River the bowls and water jars are placed on stands, somewhat in the shape of an hour-glass (pl. 89 A), made of palm strips bound together with “bush

rope" (KG, II, 228). In the Pomeroon district, one end of a staff is split into four and the splits kept open by means of a withe tied in a ring on their inside (fig. 97); the other end is stuck vertically into the ground. The Arawak call it *dooda-boráddo* on the Moruca, where I have seen it used for holding the buck pot after taking it off from the fire. In the catalogue of British Guiana contributions to the London International Exhibition of 1862 mention is made of two stands for pots used by the Indians and made from the seed capsules of the *kokerit* palm from the Berbice River (CC, 47).

Head pads for carrying jars, impedimenta, etc., on the head are made of strips torn from the bark of the black mahu (*emosé* of the Carib) something like the *kakaralli*. The strips are rolled into a circle and then bound round and round in the shape of a quoit. Black mahu straps are also used for knapsack straps (sec. 450).

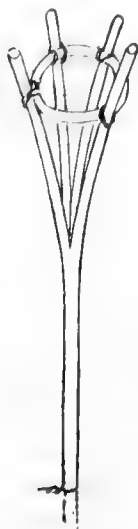


FIG. 97.—Pot stand from the Moruca River.

393. Certain of the closework basketry mats, while possessing points of similarity, can always be distinguished from rectangular trays by the manner of attachment of their bordering or edging. With the former, this edging, if present at all, lies in the same plane as the body or foundation, whereas with the latter it is specialized into a more or less vertical, distinctly raised rim. On the other hand, so far as their application to domestic use is concerned, there is little differentiation between them and the simpler forms of trays. For instance, the edging of such a tray may be so flexible as to allow of the whole article being laid flat, whereas the sides of a mat may be sufficiently strong and firm to allow of its being supported by them like a tray. Again, the foundation for the majority of mats and trays is a rectangular plaitwork of the ordinary one-over-and-under-three type; but with the

Akawai and Patamona it is of the one-over-and-under-two style; on the Aiary River it may be the one-over-and-under-one pattern. The patterns represented in the first kind of foundation are many and various; e. g., the diamond snake or dog's eyes, the scissor-tail hawk (pl. 91 B), the Greek key and its variations, concentrics, and others all find room here, and in some cases would seem to be more or less special to particular tribes. Ant and wasp biting mats will be found discussed elsewhere (sec. 739). The large 5-foot square floor mats of Surinam, plaited with long, sometimes colored, strips of *warimbo*, are no longer made (PEN, I, 126).

394. Whereas objects designed originally for other purposes—e. g., shoulder-basket covers, many kinds of fan, the simpler forms of tray—may be applied to the purposes of a mat, true closework

plaited mats allow of a classification into more or less well-defined groups:

- (a) No special edging distinct from the foundation (sec. 395).
- (b) A special edging on two opposite sides only (sec. 396).
- (c) A special edging around the whole circumference (sec. 397).
- (d) Roll-up mats (sec. 398).
- (e) Mat satchels (sec. 399).

395. In the first there is no special edging distinct from the foundation. The plait may be of the somewhat rare one-over-and-under-one type (pl. 89 B), as in the square mats used on the Aiary River for covering pots, etc. (KG, II, 224), and in such a case is a checker pattern. Where, however, as is far more usually the case, the plait is of the one-over-and-under-three type (pl. 90 A), the resulting pattern is one of concentrics, grilles, either separate or combined, dog's eyes, Greek keys, etc. [I am taking no account here of the one-over-and-under-two plaited knapsack covers, which are only

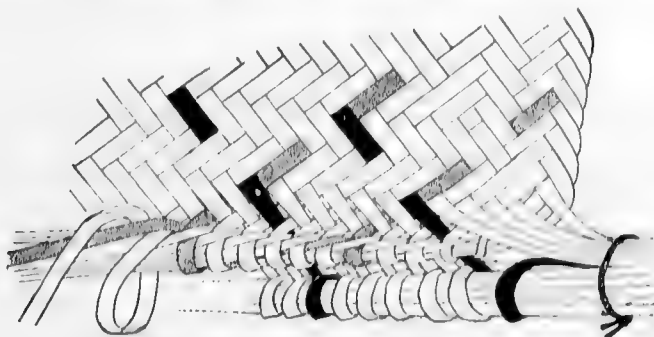


FIG. 98.—Diagram showing the manufacture of mat in plate 90 B.

used as mats secondarily.] Their mode of construction will depend upon the shape, whether a parallelogram or a square. In the former case this is identical with what I have already described for the Pomeroon Carib fan with the split-pencil handle (sec. 375). Indeed, it is almost a question whether this fan is not in reality a specialized mat. So, again, with the latter, this is identical with that of the Akawai fan (sec. 376), the same object for which all the smaller true mats may be employed. Made from itiriti by Akawai, Carib, Patamona, Arekuna, Warrau.

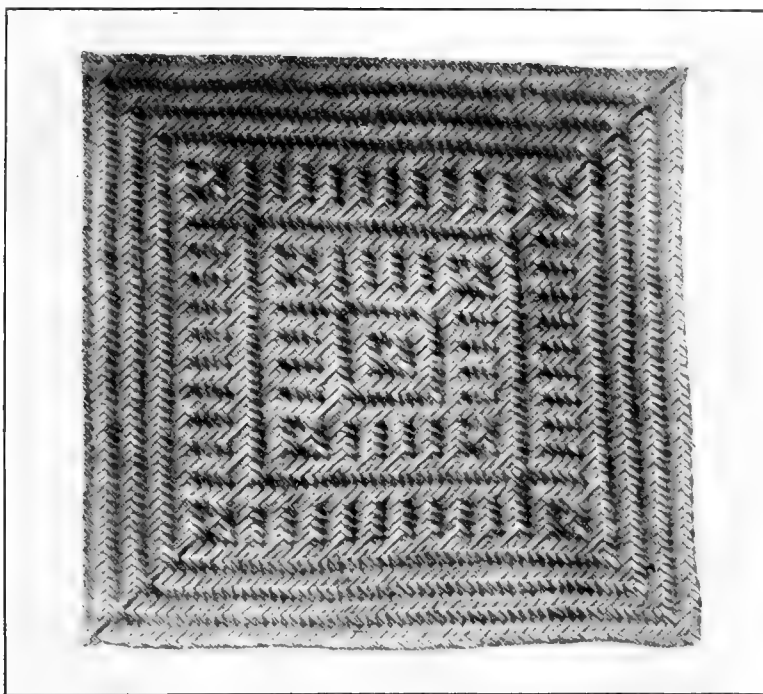
396. In the second group will fall all those mats with a special edging only on two opposite sides (pl. 90 B). This is composed of two conical bundles, placed end to end, formed by the extremities of the two sets of plait strands, each bundle not only progressively increasing in bulk with every plait strand added, but actually being looped up with it during the process. This arrangement can be observed in the *Astrocaryum* mats of the Wapishana (fig. 98). In the smaller itiriti plaited mats of the Makusi (pl. 91 A) the bundles,

instead of being wrapped round with the strands are tied up with kuraua fiber. Besides their use as mats for food, they are often employed as covers for paiwarri jars. The Makusi call them súmba.

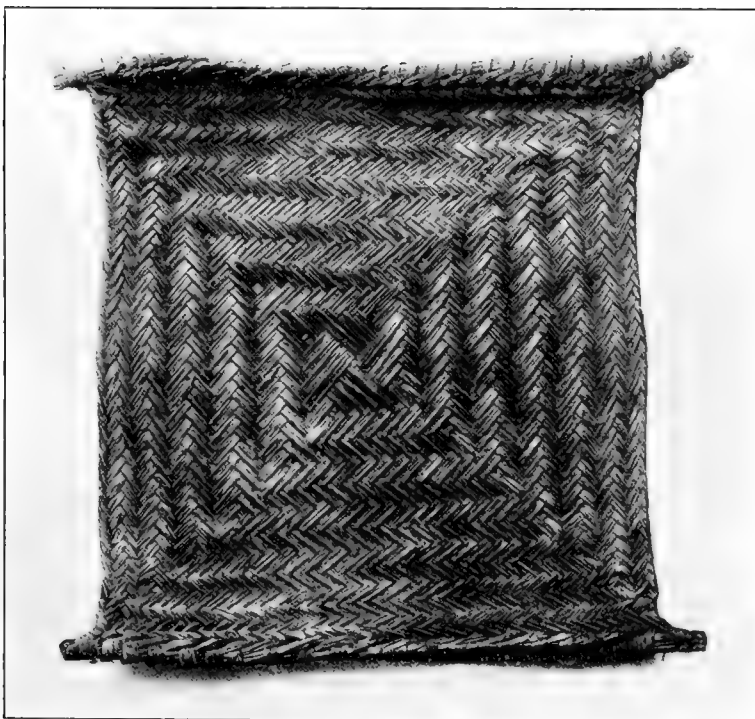
397. A third group comprises all those mats having a railed edging running around the entire circumference. The contained rail or rails is the primitive weft. With the Carib, on completion of the foundation, the process of manufacture proceeds thus: Taking up two of the projecting strands at a time (pl. 93 A), these are wound twice over a rail (*r*), and then passed across themselves to be plaited, respectively, under and over the two immediately preceding vertical pairs of strands, to be finally tucked under the extremities of the pair next emerging from under the rail. This rail is a single length of mamuri vine rope, running around the whole margin of the foundation, the intervening distance being always considerable. It may be noted that alone in these Carib mats the itiriti strands are usually irregular, and not split according to what I have described as the orthodox method (sec. 101). The result is that while the plait of the foundation is of the usual one-over-and-under-three type, the strands themselves come to be, comparatively speaking, widely apart. The Makusi type of itiriti mat (pl. 92 A) is practically identical with the preceding, save in that having the strands properly sliced and cut (pl. 93 B), the resulting plait and edging becomes more compact and much neater. Very often such mats may be converted into trays (pl. 92 B) by turning up the edges more or less forcibly and fixing them in their new position with cane, vine strips, and kamwarri fiber. In the Wapishana mats (pl. 91 B) there is an edging of two rails (weft) upon which the projecting strands are attached according to a method depicted in the diagram (pl. 93 C).

398. The "roll-up" mats of the Patamona and Makusi (pl. 94 A) are formed of numerous strips of the midrib of the kokerit palm, bound in close apposition parallelwise by means of three or four double cords passing in and out between—i. e., a sort of "chain-twist" or twined pattern (fig. 41 A). They are used as food mats, for cassava or fish, but would seem to be getting scarce now. On the Caiary-Uaupes such roll-up mats, made of cane strips, may reach a length close upon 9 feet, and are employed as covers for the paiwarri or drinking troughs (KG, II, 224). The cylindrical and purse-shaped pepper roasters of the Aiary, likewise made of a series of parallel cane strips, similarly fixed together (KG, II, 222), might also be included here. So also should the roll-up ant frame (sec. 162) and the "Venetian blind" fish fence (sec. 203) be mentioned in this connection.

399. Room must be found here for the flattened sewn-up mat satchel (pl. 94 C) of the Taurepang (Arekuna). Looked at from be-

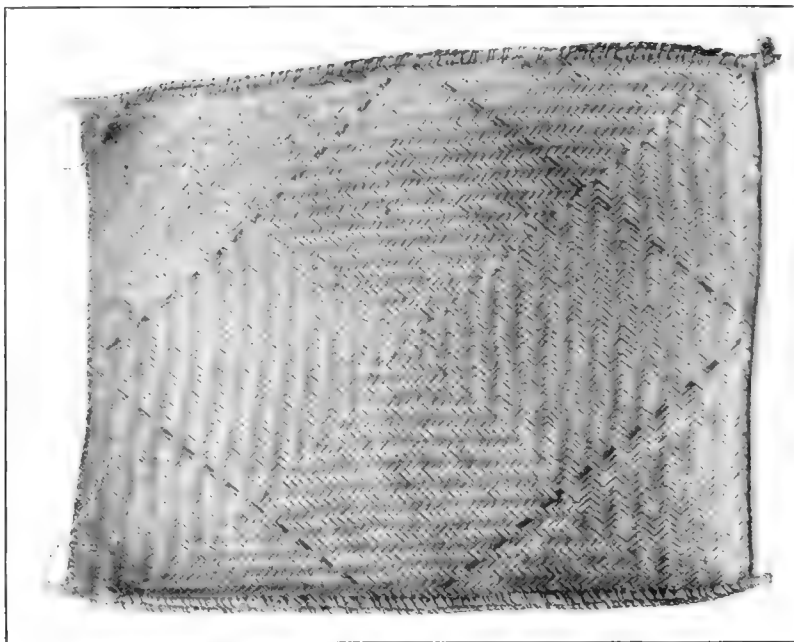


A, Mat with no special edging. Arekuna.

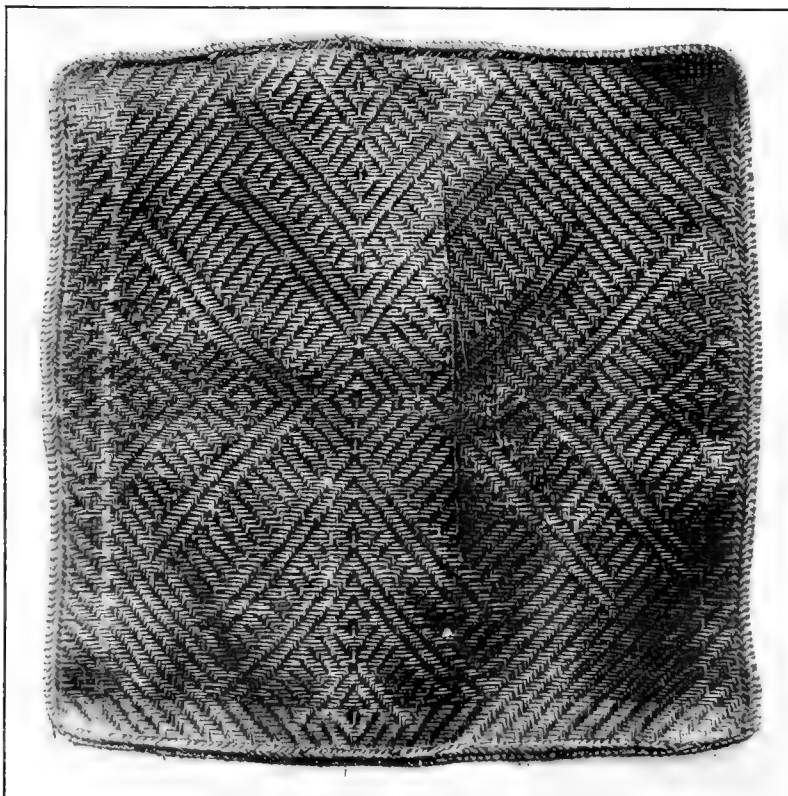


B, Mat with special edging on two opposite sides. Wapishana. (For diagram see fig. 98.)

MATS

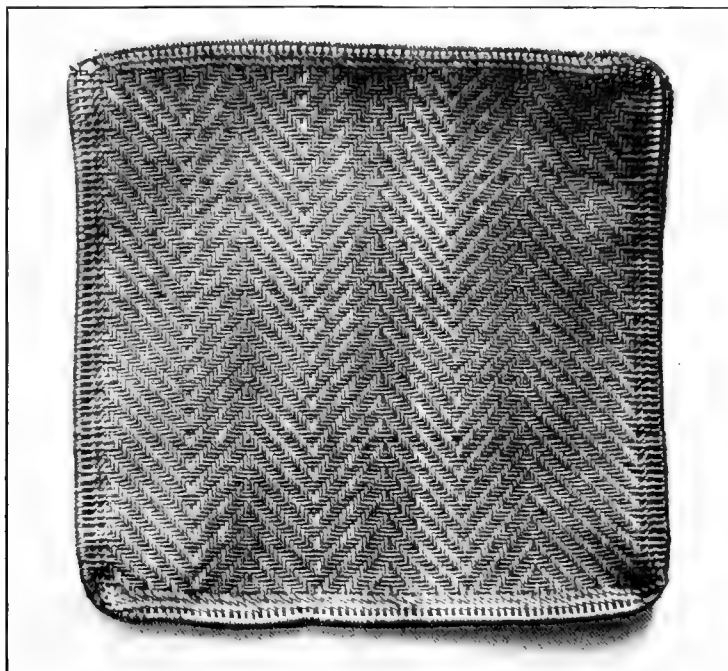


A, Mat with special edging on two opposite sides. Makusi.

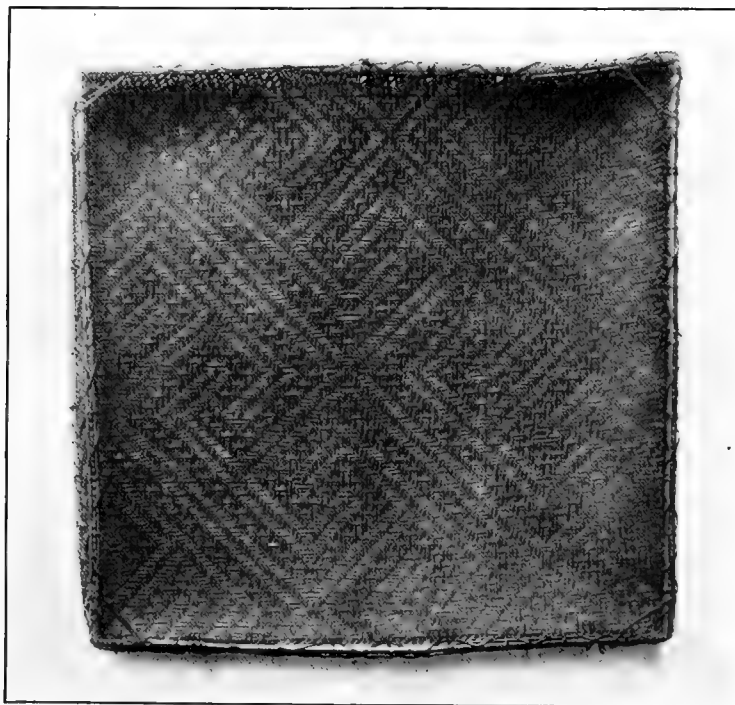


B, Mat, with special edging all around circumference: Wapishana. The pattern of plait is named after the scissor-tail hawk. (For diagram of the edging see pl. 93, *C*.)

MATS

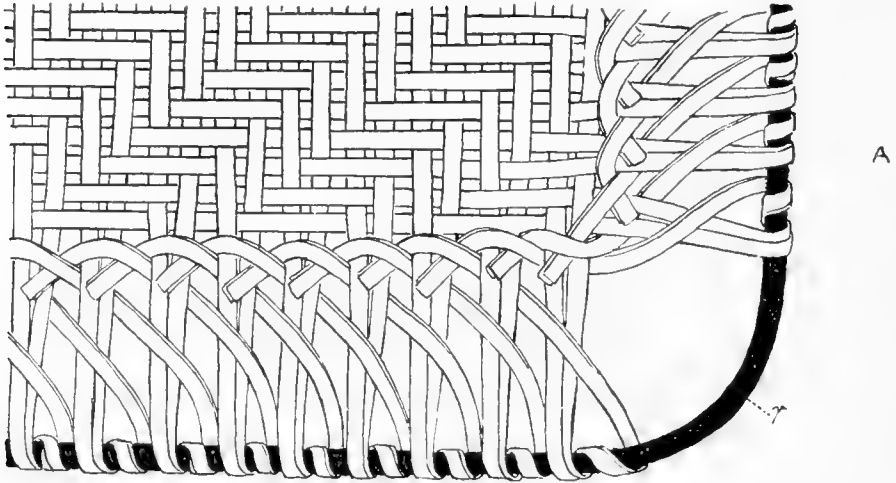


A, Makusi mat. (For diagram of the edging see pl. 93, *B*.)

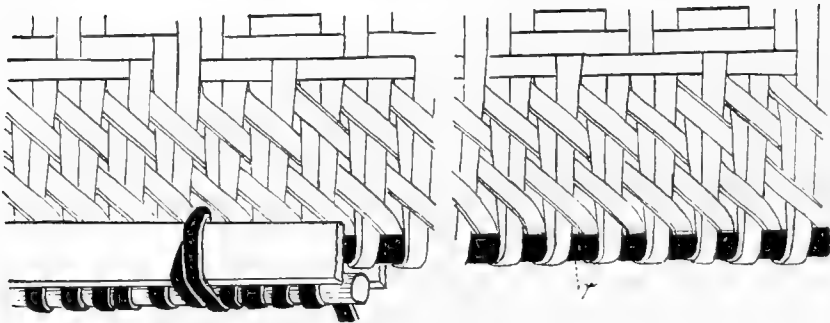


B, Makusi mat converted into a tray by means of a cane edging. (For diagram see pl. 93, *B*.)

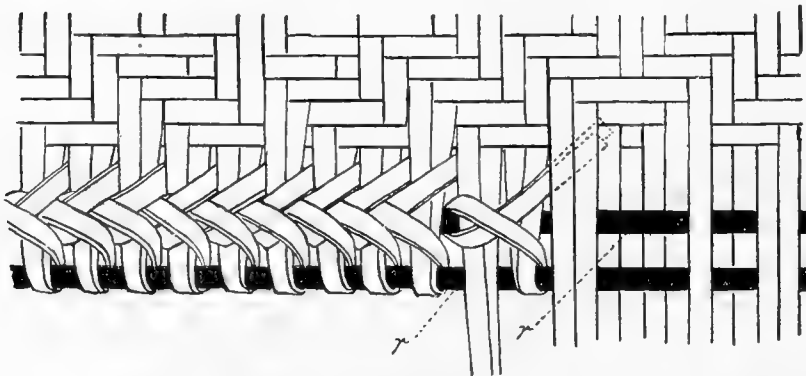
MATS



A



B



C

MATS: VARIATIONS IN EDGING

Railed edging on mats: *A*, Carib; *B*, Makusi; *C*, Wapishana. *B* is of similar but finer construction than *A*, and has been converted into a tray.

low, the base is certainly oval; indeed, so pointed sometimes along the longer axis as almost to be lenticular. On the other hand, the base has no relation whatever with the foundation of the basket, which, made like the closework Aka-wai mat, is commenced at one of the corners. This mat is finally folded at its center and sewn at the ends (fig. 99). The real contour of the base and lower edge of the basket will therefore depend upon the exact shape into which the original mat is plaited from a rectangular parallelogram to an irregular hexagon. Such variations in shape, it is to be remembered, are due to difference of technique—

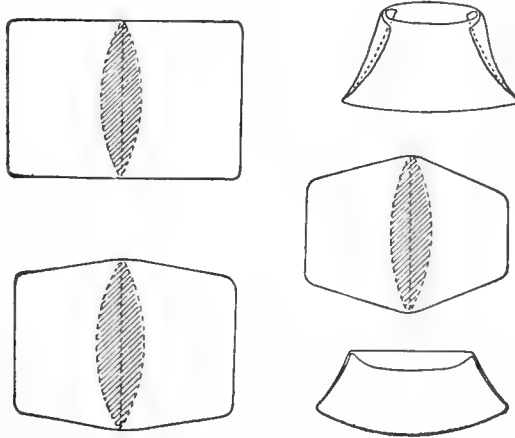


FIG. 99.—Sewn-up satchel made from a closework mat. Arekuna.

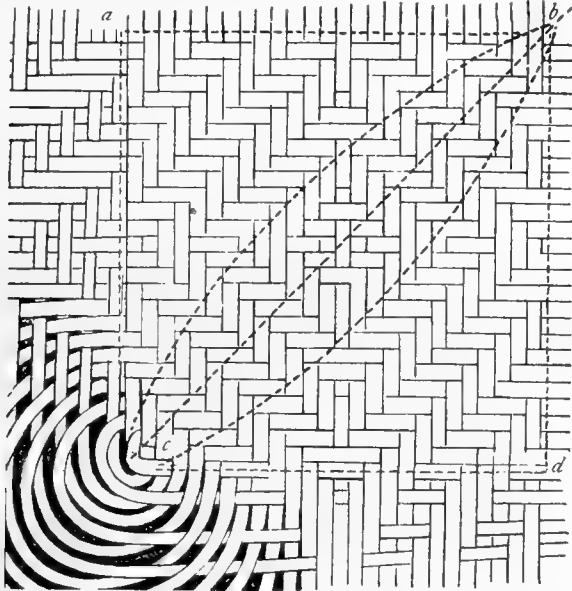


FIG. 100.—Diagram showing manufacture of mat satchel in plate 94 B.

e. g., closeness of texture, variations in strand width—and not to the addition or elimination of any of the constituents.

400. But, instead of the mat being sewn up, the front and back may be plaited up along the sides, without apparently any break in

the continuity. An example of such a plaited-up itiriti mat satchel, probably of Makusi origin, is to be seen in the Georgetown Museum (pl. 94 B). Once the original square twilled mat (fig. 100) has been constructed, with its ends left free, it is folded along a diag-

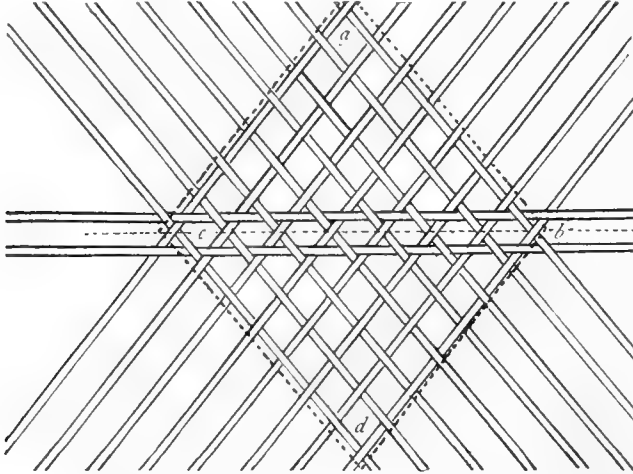


FIG. 101.—The original diagonally locked open-checker mat from which the Carib mat satchel is made.

onal (*cb*), which ultimately forms the lower edge or base of the bag, while the protruding strands are plaited together from below up in such a manner as to follow and complete the original pattern. Other examples are to be noted in the open checkerwork mat satchel of the

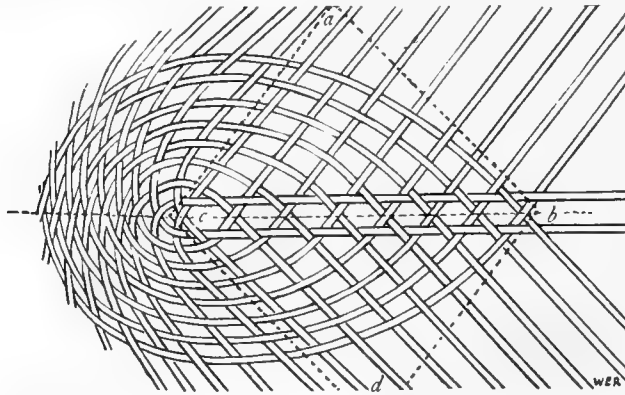


FIG. 102.—The subsequent plaiting up of one of the sides of the preceding.

Barima and Barama River Carib, where the original mat is locked by two diagonal strands (fig. 101) previous to the plaiting-up of the sides (fig. 102). These baskets are made of split mamuri.

401. Bark mats.—The Taruma are said to employ mats made of hammered bark (JO).

402. For descriptive purposes I am proposing the following classification of the multifarious articles known as trays:

A. Rectangular:

- (a) With straight vertical rims, edgings, or laminæ plaited (i) independently of any rail or weft (sec. 403); (ii) after being wound over a supporting rod (weft) or rail (sec. 404); (iii) inclosing a series of rails (wefts) (sec. 405).
- (b) With concave outward sloping rims (sec. 406).
- (c) Hanging trays (sec. 407).

B. Circular:

- (a) Edging formed of (i) its own strands specially twisted and plaited (sec. 408); (ii) a capped lining (sec. 409); (iii) a series of rails (sec. 410).
- (b) Hanging trays (sec. 411).

403. Rectangular trays with straight vertical rims are all plaited in closework, and are mainly employed for collecting the cassava flour after passing through the sifter; but, of course, they can be and are put to other uses. As already mentioned (sec. 393), the plait for the foundation is ordinarily the one-over-and-under-three (twilled) type (sec. 108), but with the Akawai and Patamona it may be seen worked on a one-over-and-under-two model (pl. 97 A, B). Once the foundation is completed, the procedure is continued along one or other of the following lines: In the first series (pl. 96 A), the projecting strands (itiriti) are plaited in such a manner as to form a vertical laminated edging—i. e., at right angles to the foundation and of equal depth above and below (fig. 103 A). The upper and lower borders of this edging may be subsequently strengthened with cane strip and vine (pl. 96 B; fig. 103 B). Wapishana, Makusi.

404. The second series will contain the Akawai forms (fig. 103 C), where the projecting strands form a similar laminated edging after being wound over and under a supporting rail (or weft). Taking two projecting strands at a time, these are together rolled once over the rail (r) and emerge from beneath it. They are next "broken" (i. e., sharply bent upward) and passed, respectively, over and under the two next emergent pairs, to be finally bent downward and plaited, respectively, under, over, and again under the next three pairs, behind the last one of which they are cut. The outcome of this technique is that the two margins of the strands, where broken, form two sharp ridges, which, in practice, are drawn very close together.

405. In a third series may be placed trays where the edging is composed of a series of rails (wefts) plaited together, by means of the projecting strands, to form the vertical lamina (pl. 97 A). As

the depth of this lamina is dependent upon the number of contained rails, it may or may not be of equal extent above and below the level of the base or foundation surface. From 4 to 10 rails are utilized in the construction of these edgings. In Wapishana (*itiriti*) specimens I have seen some with 2 above and below, as well as others with

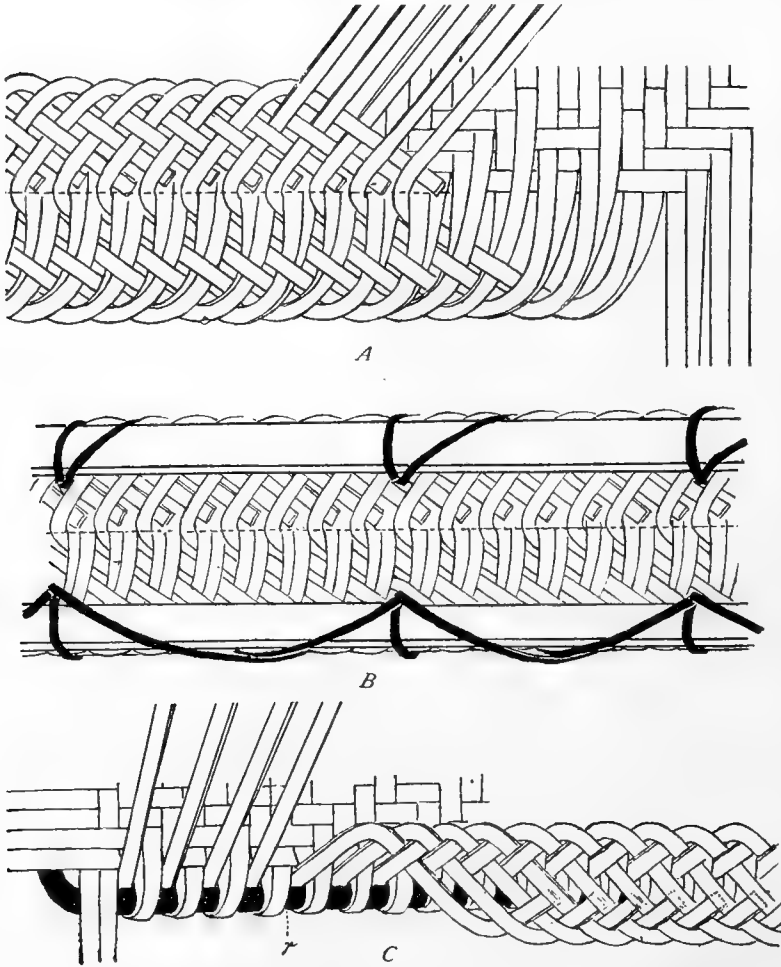
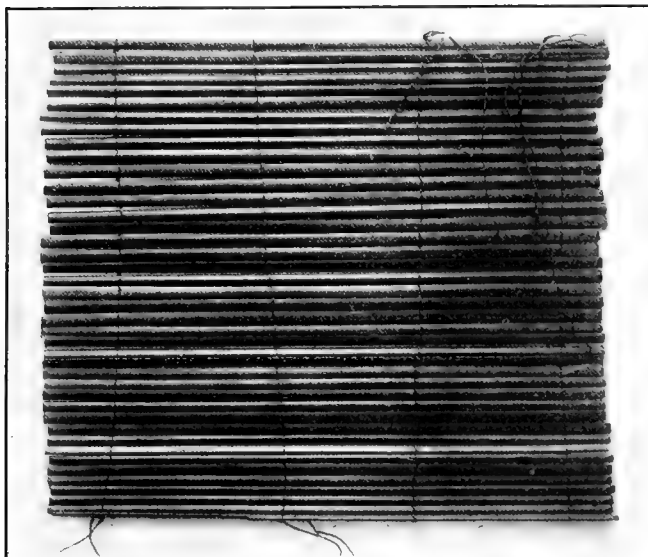
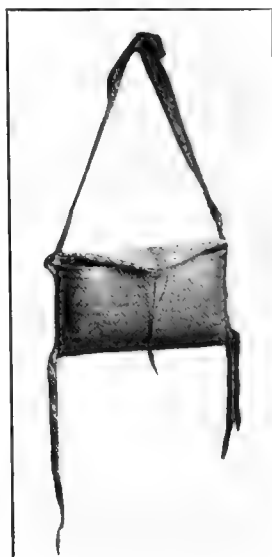


FIG. 103.—Rectangular tray—straight vertical rim, etc. A, B, Wapishana; C, Akawai.

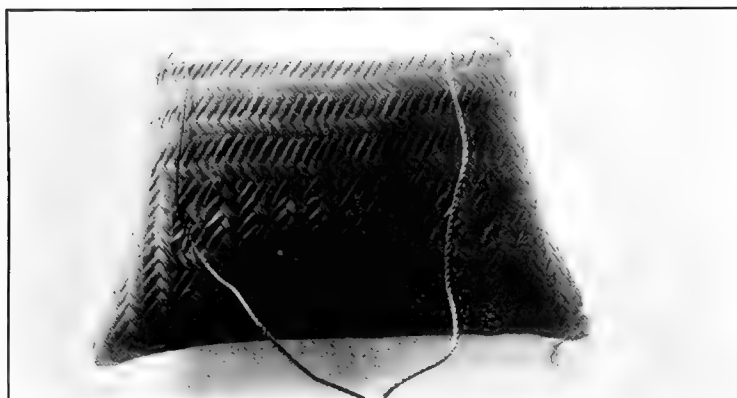
3 above and 1 below (fig. 104). In the Patamona (*Astrocaryum*) articles 3 above and below; in the Arawak, Warrau, Carib, Akawai, etc. (*itiriti*), trays from 3 to 5 above and below. The manufacture of a typical Arawak tray, say, with 6 rails (wefts) might be described thus: Taking up two at a time (fig. 105 A, *ab*, *cd*, *ef*) of the strands projecting from the foundation, these are together passed



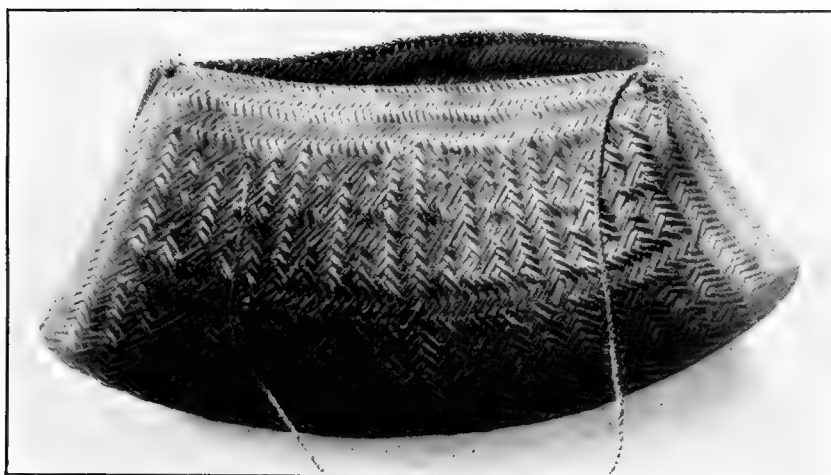
A



B



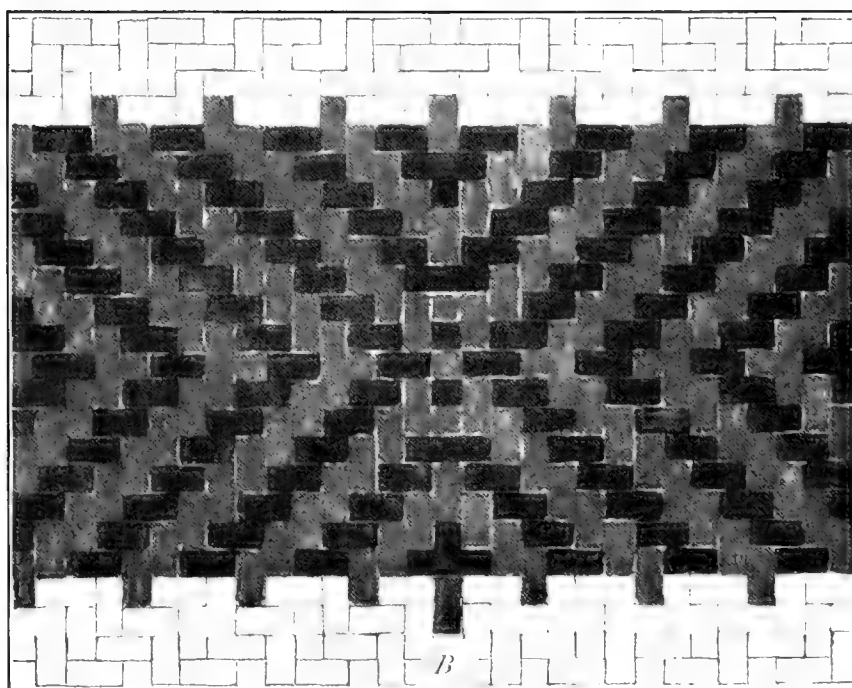
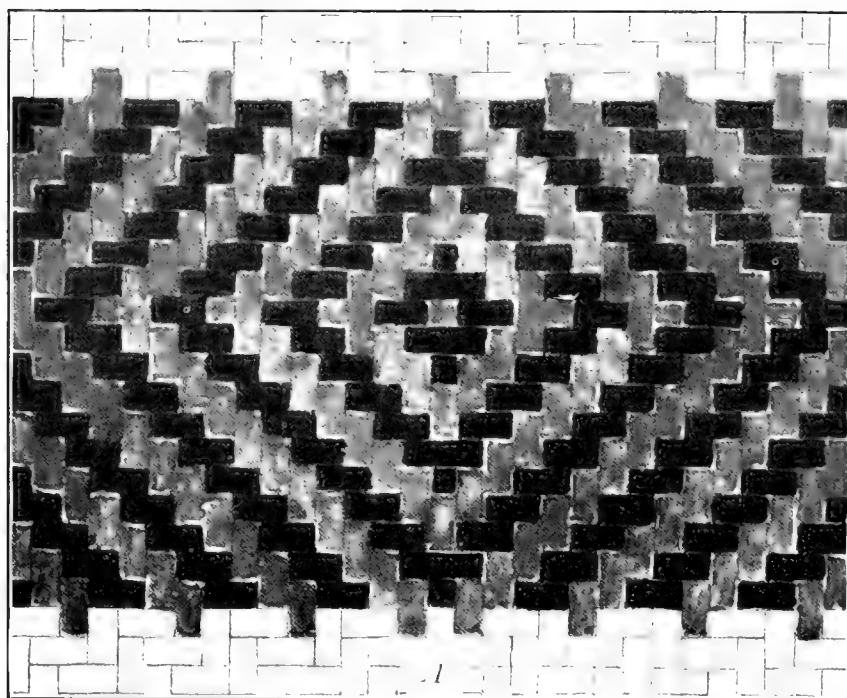
C



D

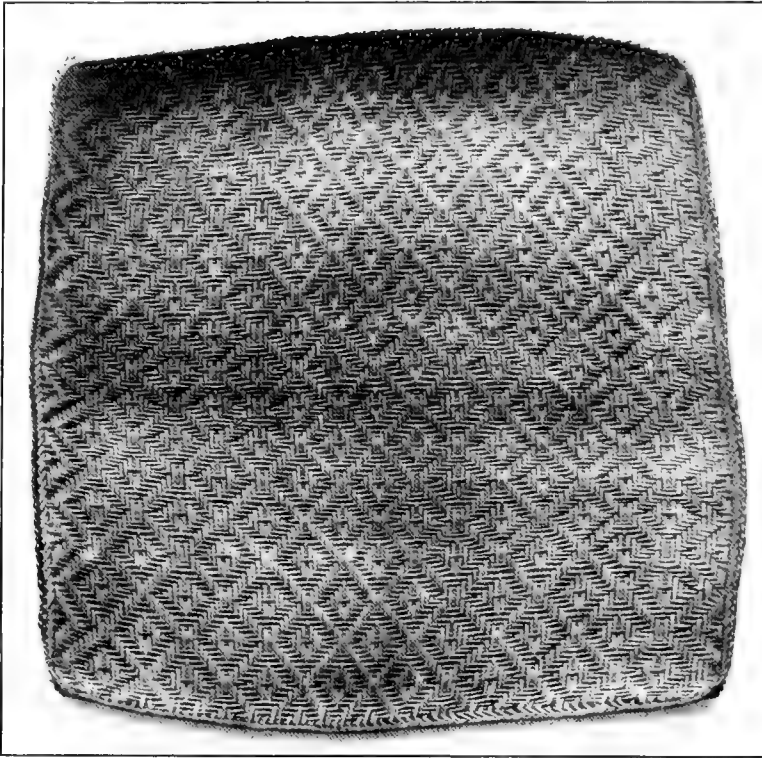
ROLL-UP MAT; SACHELS

A, Roll-up mat formed of strips from the midrib of the kokerit palm. Patamona. B, Plaited-up mat satchel. Probably Makusi. C, D, Sewed-up mat satchels. Taurepang.

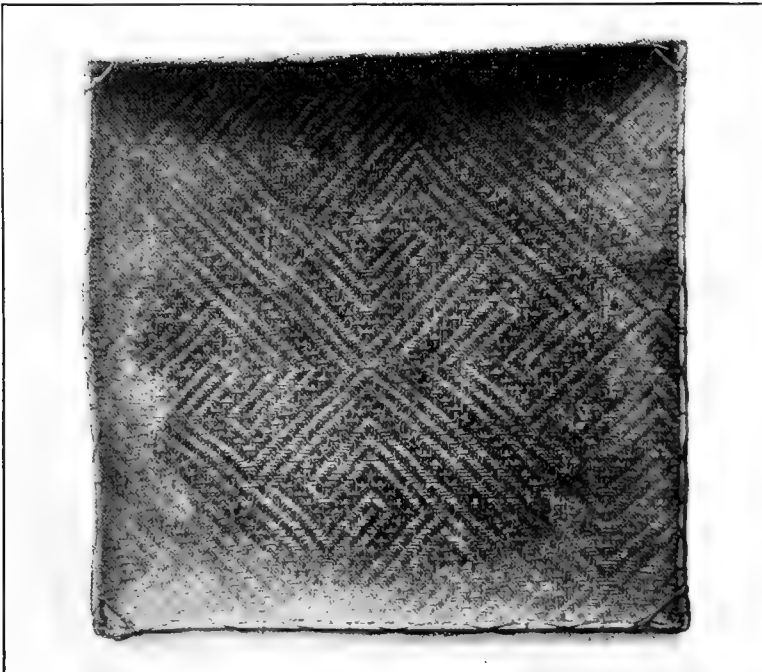


TRAYS

A, Patamona; *B*, Akawai. One-over-and-under-two (checker) type of mesh. (Shaded only for descriptive purposes.)

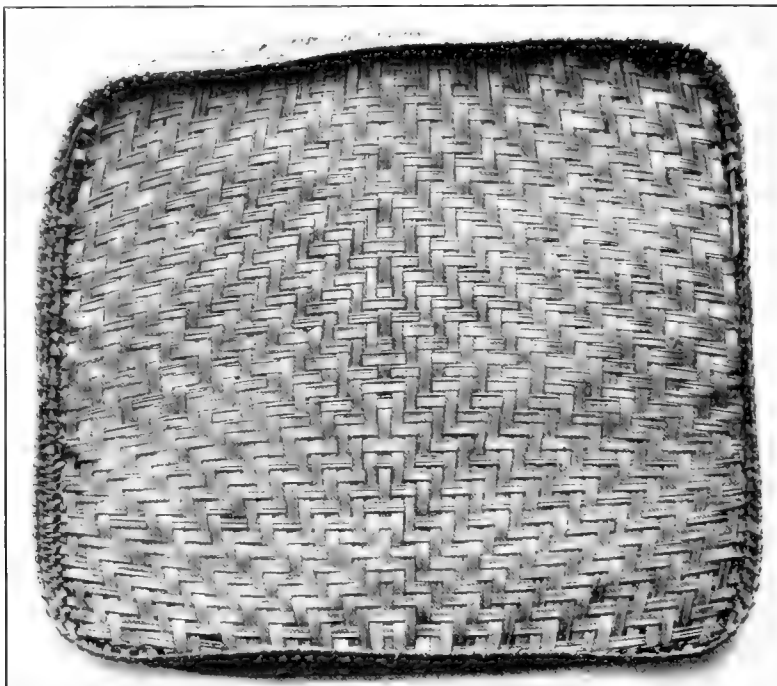


A, Wapishana tray. (For diagram see fig. 103, *A*.)

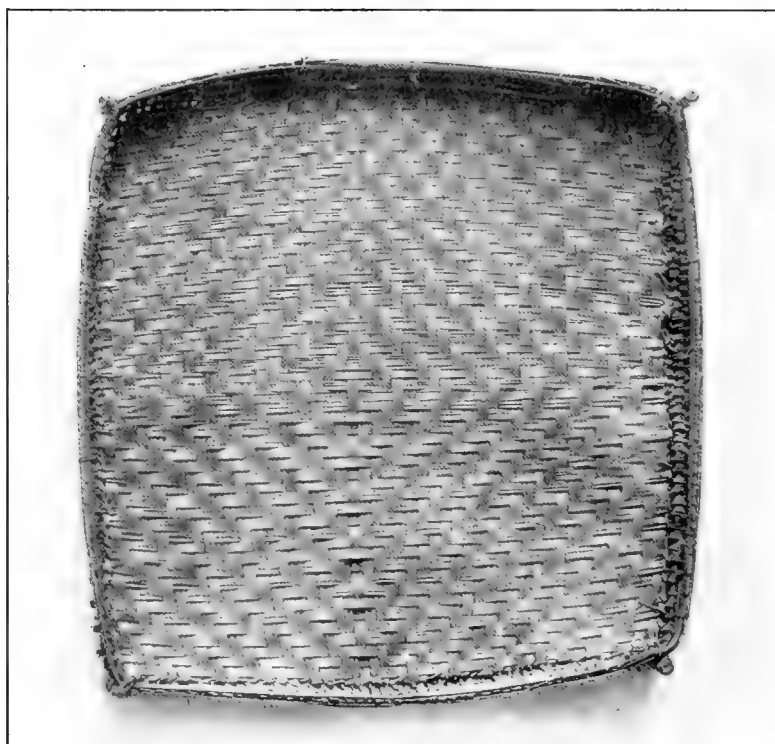


B, Wapishana tray strengthened with cane strip and vine. (For diagram see fig. 103, *B*.)

TRAYS



A. Akawai tray with a 3-rail (west) edging.



B. Tray with a rail edging, fixed on legs to form a miniature table.

TRAYS

upward over, under, and again over the upper rails (*h*, *i*, *k*) respectively, whence they are plaited in the reverse direction to the spot

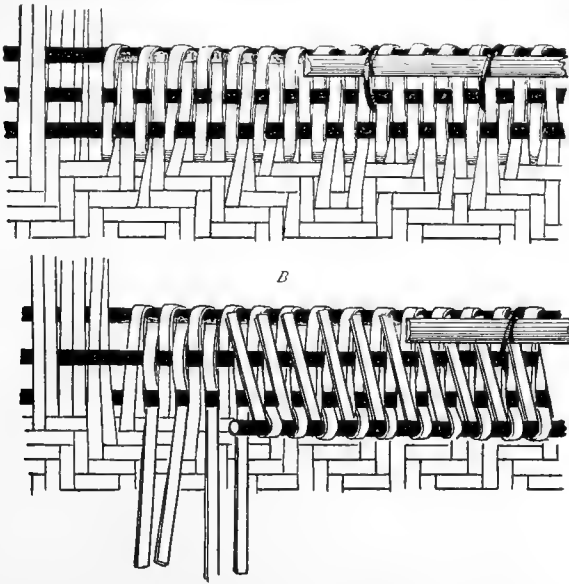


FIG. 104.—Rectangular tray, edging with three rails above (A), and one rail below (B).

under the first rail (*h*) to the *right* of whence they started. This process is repeated all the way round the square, and when the upper half of the lamina is thus completed, a similar procedure is put into execution to constitute what will ultimately become the lower half (D). The result is that the free ends of the projecting strands come to lie exactly over their own points of origin (from the foundation edge) just above which they are cut. This arrangement will perhaps be made clearer in the diagrammatic vertical section (A, *g*). The upper and lower margins of the edging are next strengthened by two (B), sometimes three (C), slips of split cane fixed in various ways with strips of mamuri, while in the larger trays the corners may be further supported by ties

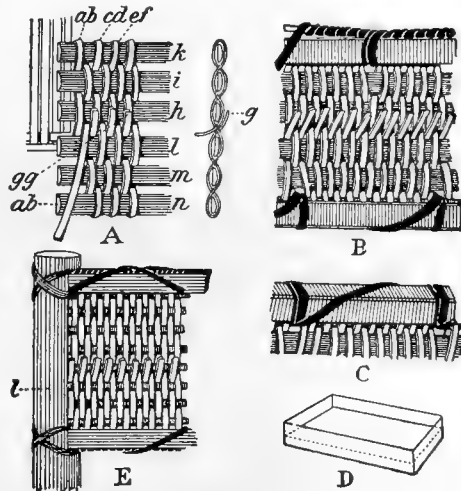


FIG. 105.—Rectangular tray—three rails above and below.

fixed across the inside. And, lastly, it sometimes happens that one sees legs (*l*) attached (*E*) at the corners to help form a sort of miniature table (pl. 97 B; fig. 106), which is very probably of the kind reported in use among the islanders (sec. 332).

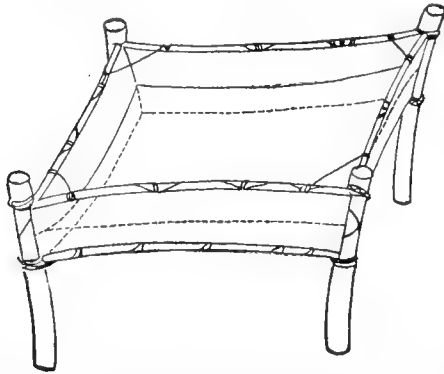


FIG. 106.—Miniature table made from rectangular tray.

406. Rectangular trays with concave outward sloping rims or edgings (fig. 107 A), all supported with a spiral weft, might almost be regarded in the light of shallow baskets. In the accompanying illustrations dealing with their details only a portion of the corner of each tray or basket is shown.

I have only observed them among the Pomeroon Carib. In the first series (B) the foundation is a closework wicker-plait (fig. 37 F). The projecting strands (warps) with the introduction of the con-

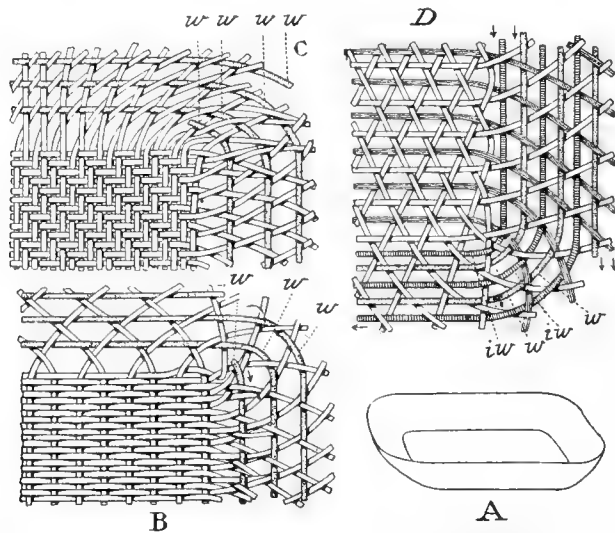


FIG. 107.—Rectangular trays with concave outward sloping rims. All Carib.

tinuous (spiral) weft (*w*) forms the common openwork hexagonal pattern. In another group (C) the foundation is built on the Akawai twilled type of plait (fig. 38 B), but the construction of the rims or sides is similar. Yet another category (D) will include those with an

openwork hexagonal-pattern foundation with each interspace restricted by a single interpolated strand. In this case an interpolated weft strand (*iw*) also limits the interspaces in the sides. All made of itiriti.

407. Rectangular hanging trays would seem to be of about the most primitive type of plaitwork met with, and, like the preceding, it is a question whether they should not be regarded as baskets. The foundation is made of a right-angled plait of the one-over-and-under (checker) type (sec. 106), having each strand at about its own width apart from its parallel neighbor. Upon completion of this base, which is more or less square, the projecting ends of the strands along each of the four sides are collected into three portions and worked into a triple plait (fig. 108), these four plaits being ultimately bent up and knotted together on top, very much in the same style as a laundry woman would tie the corners of a square sheet over a bundle of washing. Made of itiriti. For use, it is suspended from a beam by a thread tied to the upper knotted portion.

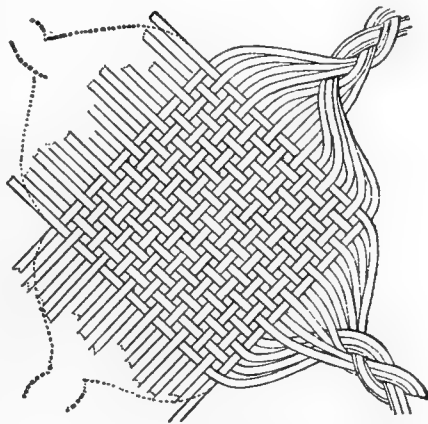


FIG. 108.—Diagram of rectangular hanging tray.

408. Circular trays.—All closework circular trays are more or less concave, and are invariably made from a square foundation plaited on the flat.

The following describes their construction as observed among the Warrau (pl. 98 A): Starting with two pairs of (itiriti) strands placed at right angles, a square foundation of from 18 to 22 inches in width, exclusive of the free ends of the strands projecting to a distance of another 8 or 10 inches, is finally completed, a common pattern depicted being a series of concentric squares (fig. 109 A) having their diagonals at right angles to the sides of the mat. The plait consists of one strand being passed alternately over and under three (twilled). The two commencing strands, where they reach the sides, may be finally tucked back and upon themselves, for strengthening purposes only. Certain of the strands, to intensify the pattern, may be stained black, even when the article is intended for domestic use, i. e., not for sale or barter. Two thin wooden hoops (*a*, *b*) are next prepared,

having a diameter somewhat less than the width of the mat, which, after being placed between the two and carefully "dumped" in the center to give the necessary concavity, is then tied onto both of them in eight places at equal intervals. This tying, which serves but a temporary purpose, is done with a piece of itiriti strand, for which a passage is made where required with a deerhorn piercer. Each of

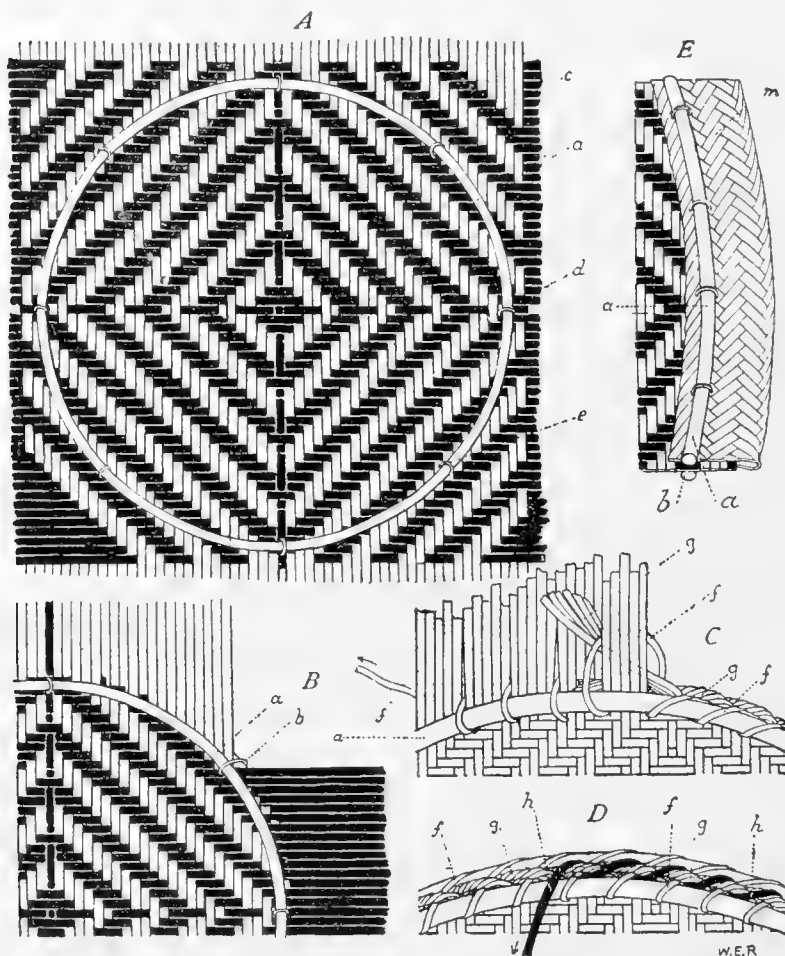


FIG. 109.—Manufacture of circular tray by Warrau.

the four corners of the square projecting beyond the hoops is now thinned (B) just around the circle by cutting away all the horizontal strands in one half of each quadrant and all the vertical strands in the other half. The next thing is to take an extra long piece of mamuri (*f*) and overcast the whole edge (both of the hoops and intervening mat included) at intervals of about five or six strands at a time (C), the mamuri being inserted fairly loosely at

first. Each such set of five or six strands is twisted tightly together into a bundle (*g*), which is laid over the next coil of mamuri, but under the succeeding one (so as to lie in the furrow between the loops), at the same time that the overcasting piece of mamuri

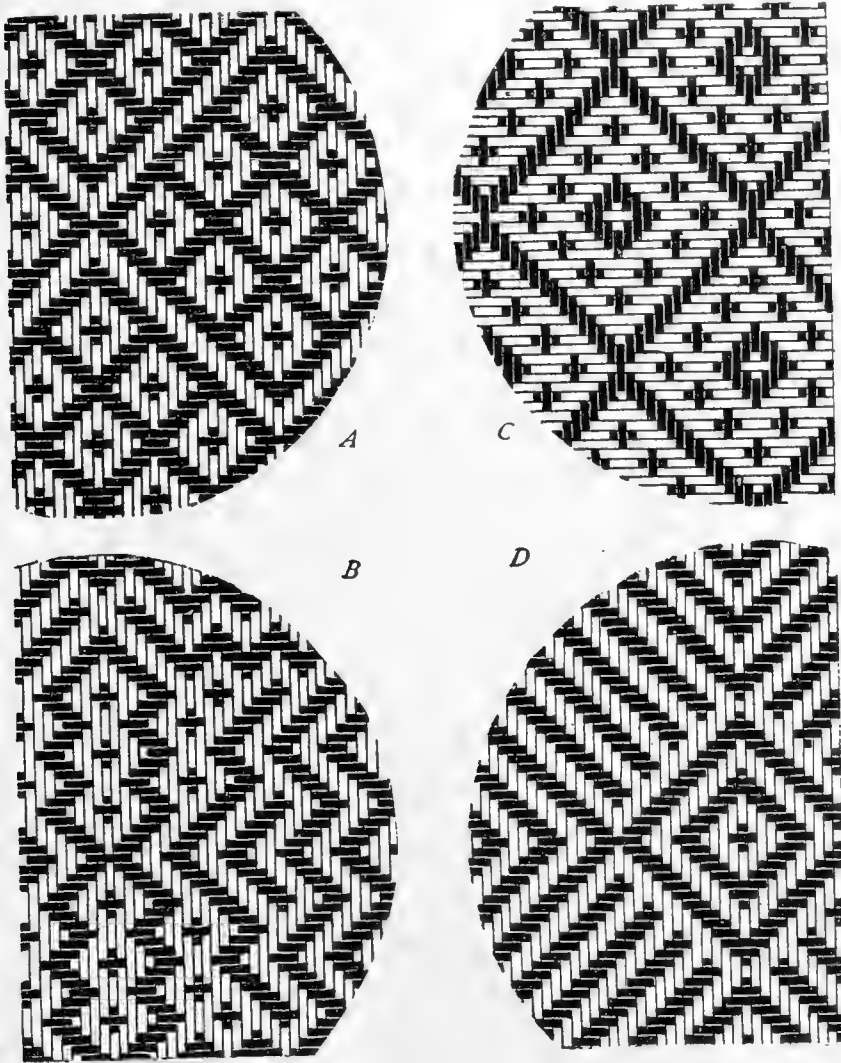


FIG. 110.—Circular trays. All Warrau patterns.

strand is tightened up, bit by bit, with the object of fixing and keeping the twisted bundle in place. Finally (D) a second strand of mamuri (*h*) is passed successively under each coil of the overcast portion and *over* the intermediate twisted bundles of itiriti. The reason for making this edging so strong is to guard against the pressure of the operator's hand when sifting the ite flour through,

because there is no doubt that among the Warrau, in addition to its adaptability for carrying purposes, or perhaps even primarily, it is used as a sifter. It must be remembered that this particular flour from the ite palm is far finer even than the ordinary domestic variety of the European household (WER, v). In appearance these

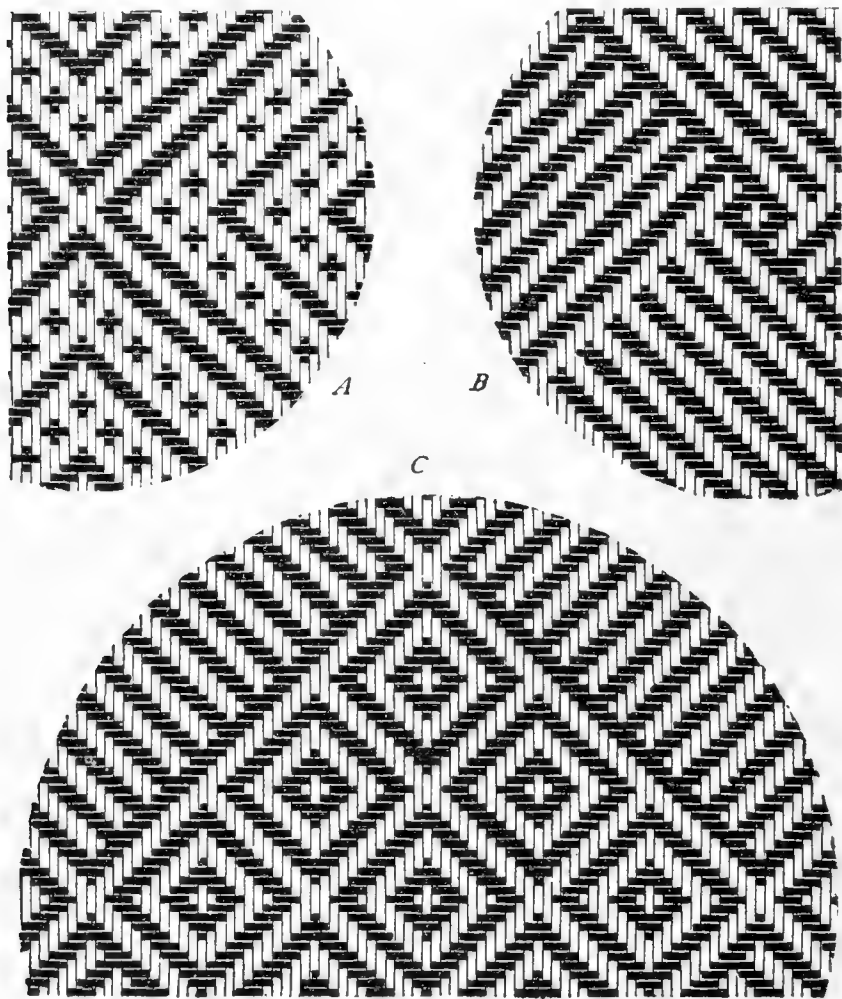
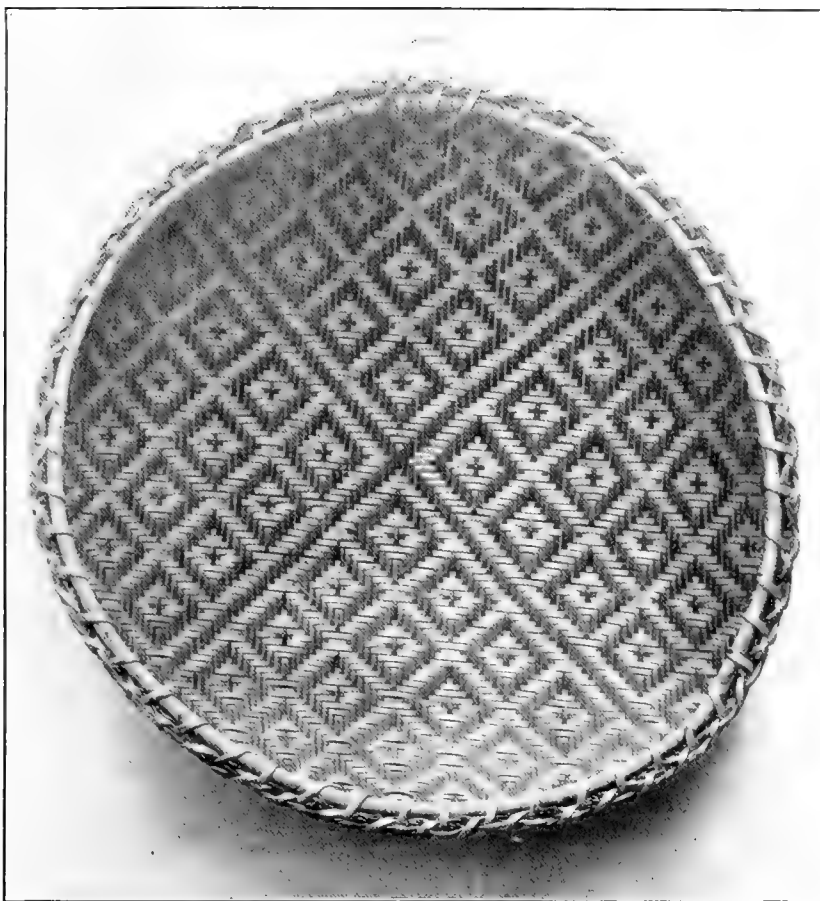


FIG. 111.—Circular trays. Warrau and Akawai patterns.

circular sifter trays would almost seem identical with the finely woven trays figured from the Caiary-Uaupes River (KG, II, 219).

409. A similarly shaped, even perhaps comparatively more concave tray, but with a different edging, is made by Arawak, Wapishana (who call it *wó-pa*), Warrau, Akawai, Makusi, Arekuna, Taruma, etc.; in fact, it is of very wide distribution throughout the Guianas.



A, Circular tray. Wairau.

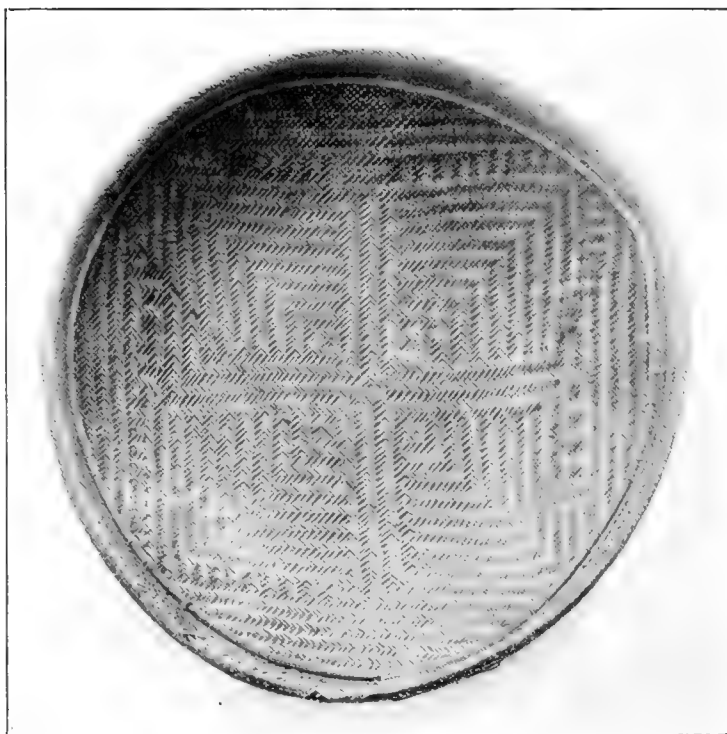


B, The tarimba monochord. Wairau.

CIRCULAR TRAY WITH OVERCAST EDGING; MONOCHORD



A, Frog pattern. Taurepang



B, Made of itiriti.

CIRCULAR TRAYS WITH COVER EDGING

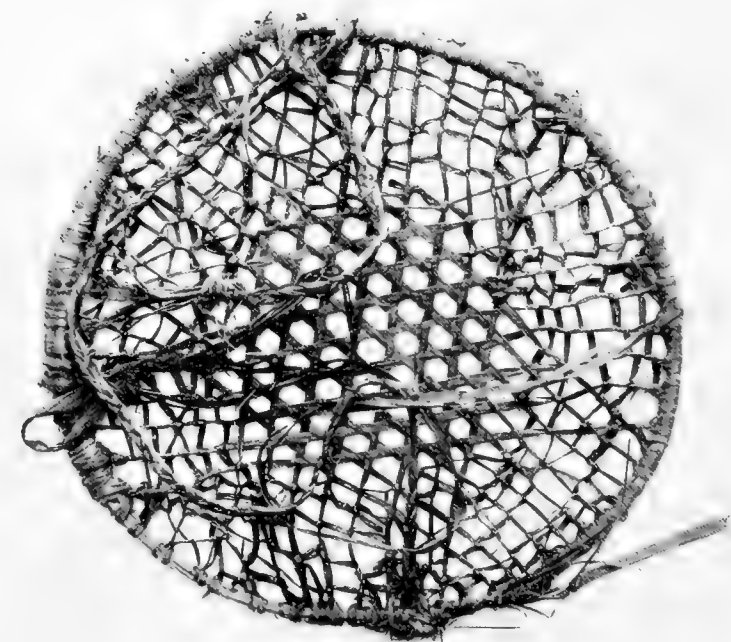


A, Circular tray with railed edging. Made of *Astrocaryum*. (For diagram see fig. 113.)

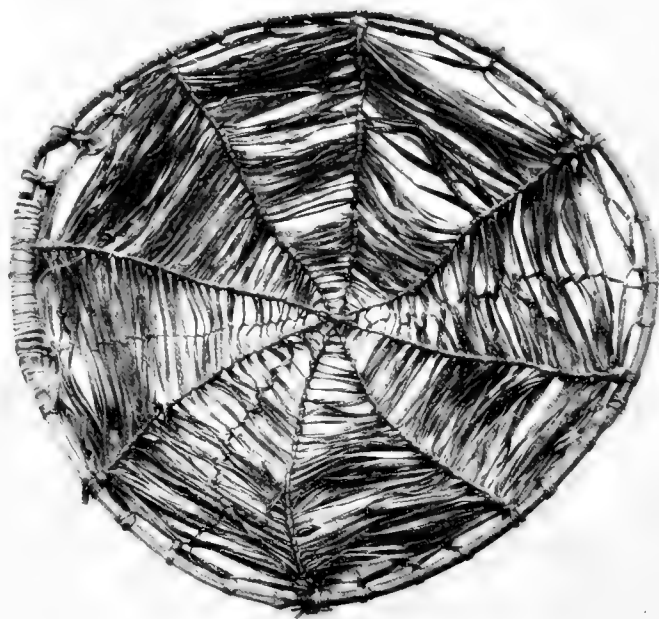


B, The kau-uri basket of the Arawak. Hexagon type base with a single spiral weft. (For diagram see fig. 115.)

CIRCULAR TRAY WITH RAILED EDGING; KAU-URI BASKET



A



B

CIRCULAR HANGING TRAYS, ARAWAK

Itiriti is the material used. Certain specimens (pls. 99 A, B; 100 A) may be employed for collecting the cassava after it has passed the sifter or after removal from the matapi; others may serve to hold fruit, cotton freed from seed, and for all other transport purposes. The construction of the edging would never allow of their being put to use as sifters. This edging (fig. 109 E) is manufactured on the same lines as the collar band of the matapi (sec. 348), and after having reached the requisite length, is folded lengthwise and the margin of the mat, cut away circularly, laid between its folds: the next process is to plait the free ends of the edging together so as to make a continuous ring of it. By finally tying on two hoops (*a, b*) in the manner previously indicated (sec. 408) the edging becomes permanently fixed. Among the patterns depicted on these circular trays are

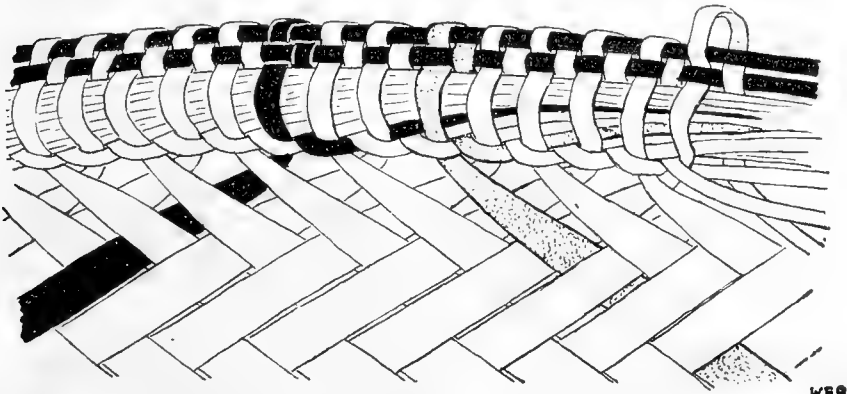


FIG. 112.—Circular tray. Edging supported by two rails. Wapishana.

the diamond snake (fig. 110 A), periwinkle-track (B), monkey-skull (D), the quartering of a cassava cake (fig. 111 B), etc.

410. In the *Astrocaryum* specimens of circular tray made by Wapishana and Taruma there is great similarity between their edging and that of the second group of mats (sec. 396); e. g., the two sets of plait strands not only constitute the bundle (which here encircles the whole article) but also assist in looping it up and keeping it in place. A difference lies in the introduction, for strengthening purposes mainly, of two and three rails (wefts), respectively (figs. 112, 113).

411. Circular hanging trays.—These are formed of circular frames hanging by four cords attached at their distal extremities. From its fancied resemblance to the animal hanging to a branch by its four limbs, it is spoken of by the Arawak as the sloth. The frame is formed of a pliable withe, across which are stretched lengths of vine-rope (titimi) or strips of kakaralli and other bark. In one variety

of tray the strip is left as a band, from 1 to $1\frac{1}{2}$ inches wide, just as it is, torn off the bark and roughly plaited in and out; in another (pl. 101 B) it is twisted into a cord, passed some six or seven

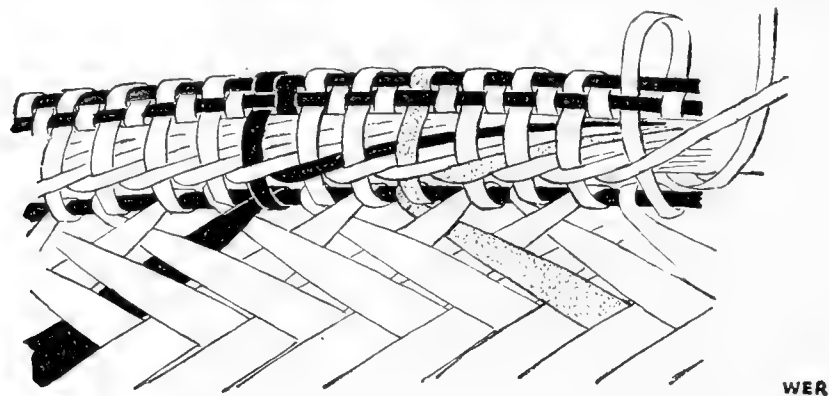


FIG. 113.—Circular tray. Edging supported by three rails. Taruma.

times across the frame, all of which are fixed in position by another cord starting from the center, passing in and out excentrically, so as to form a figure something like a spider's web. In yet a third case (pl. 101 A) there is a central hexagonal pattern. These trays serve to keep food and other articles out of the reach of dogs and ants:

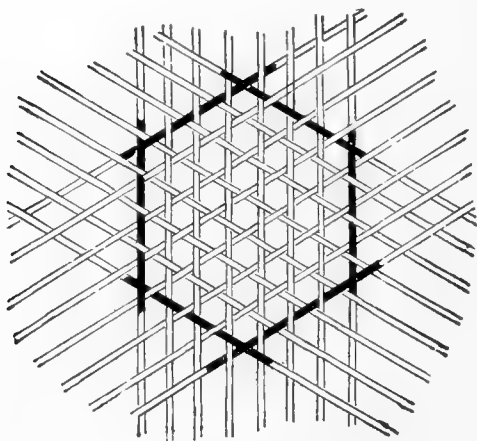


FIG. 114.—Hexagon base of the kau-uri basket.

412. Baskets plaited with specially prepared strands, as distinguished from adaptations of natural forms (sec. 453), may be classified by means of their bases, according as their order of structure is a hexagon, a circle or oval, a cone, or a rectangle (sec. 448).

In the hexagon type specimen there is an openwork foundation of one series of strands lying diagonally across another set, and plaited together by means of a third horizontal (or vertical) set (fig. 114). Though the number of strands in each series remains relatively the same, the actual number employed will depend upon the size of the basket about to be fabricated, and all ultimately constitute the warp. The result of this arrangement is a hexagon. The weft is either in the form of one single continuous strand, gradually progressing

spirally around the circumference of the basket from base to top, or else is formed of separate rings, one above the other.

Some of the kau-uri baskets (pl. 100 B) of the Arawak, etc., are good examples of the former variety—those with a spiral weft. Kau-uri is the Arawak generic term for any basket worn back of the shoulders with strap over the head, irrespective of the material from which it is woven. These are manufactured of split mamuri to insure strength, owing to the heavy weights of cassava that they are intended to carry. Hence if

mamuri is not obtainable, as is sometimes the case, and they are made of itiriti, they will last but a short time. Once the hexagonal founda-

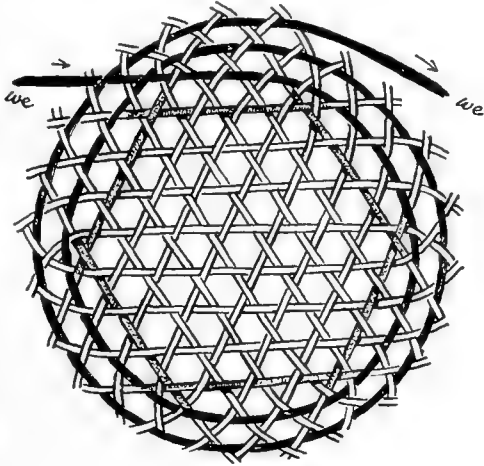


FIG. 115.—Hexagon base basket. Single spiral weft, and no extra warps.

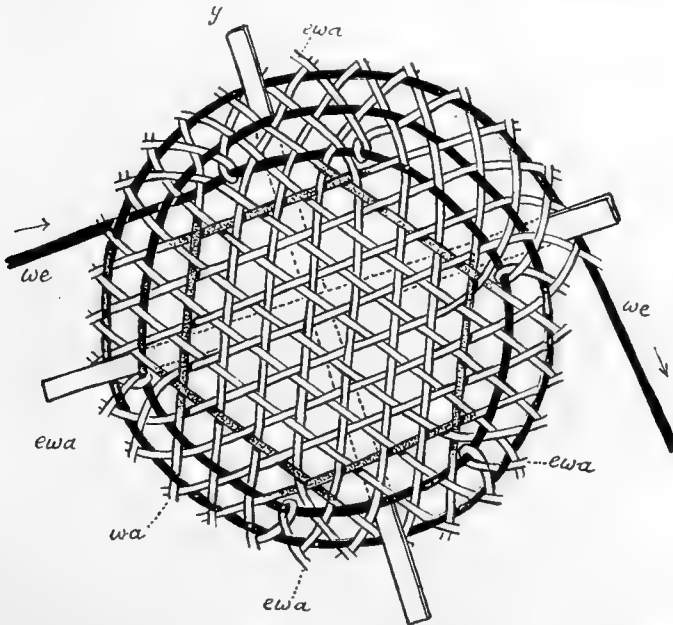


FIG. 116.—Hexagon base basket. Single spiral weft, and six extra warps.

tion has been made, the weft (fig. 115, *we*), as long a strand as procurable is introduced, and the convexity of the article foreshadowed by temporarily fixing (fig. 116) two small flat sticks (*y*) cross-

wise through the periphery. But if the process be continued (fig. 115) and the same size of mesh retained in the construction of the basket's sides, the resultant shape will be more or less a cylinder (sec. 413), with the size of the mouth not very much, if at all, larger than the base. The result is a basket, strong enough, no doubt, made in orthodox fashion, but owing to its shape of not sufficiently ample accommodation. It can be, and is, used by the youngsters. On the other hand, increased capacity is essential, and to obtain this the mouth must be of much greater size than the base. Hence, in building it to the shape necessary for this purpose to be effected, the size of the mesh will necessarily increase in direct

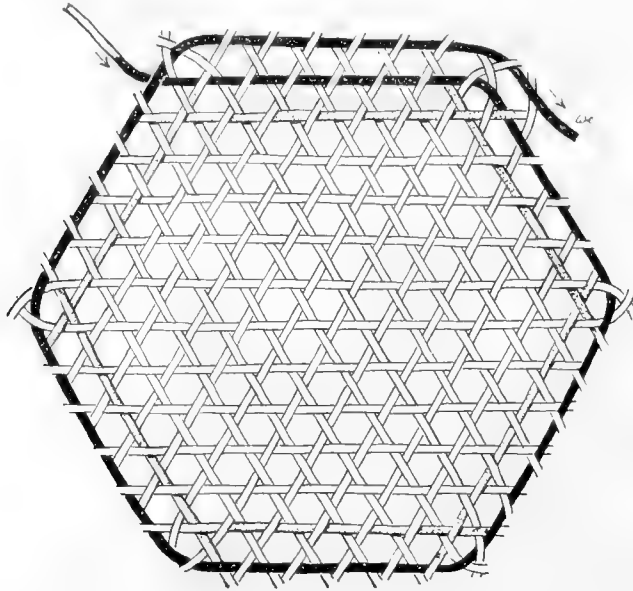


FIG. 117.—Waikarapa basket. Hexagon base; single spiral weft. From below.

proportion as its manufacture proceeds. To obviate this and to allow for expansion, an extra warp (*ewa*) is now attached at each angle of the figure (fig. 116), where the strands commence to cross as the sides begin to rise. These six extra ones (no more are inserted throughout the whole of the plaiting) are known as the "children" (*chukutu*) or "extra" (*asatahu*). The same people speak of the spiral weft as the *akausukutahu* or *todolebo*. The sides are of hexagon (sec. 109) mesh. The mouth of the basket, which is much larger than the base, is finally completed by weaving strands thrice round the projecting warps and terminal portion of the weft. Strips of a particular kind of bark passed through the interspaces of the upper portion of the article act as a band which passes across the forehead of the bearer. Though made by men, it is used by women. At times

I have seen it turned upside down and used as a hencoop. It is this kind of basket which is sometimes woven over the larger gourds and earthen jars for protective purposes (sec. 449).

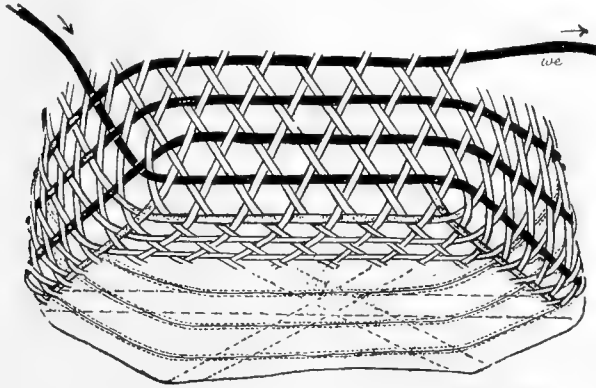


FIG. 118.—Waikarapa basket. Hexagon base; single spiral weft. From side.

413. Other examples of the spiral-weft variety (figs. 117, 118) are the more or less cylindrical waikarapa baskets of the Makusi, also found among the Wapishana, who speak of them by the generic term of wakarad. The proximal portion of the weft becomes treated as a

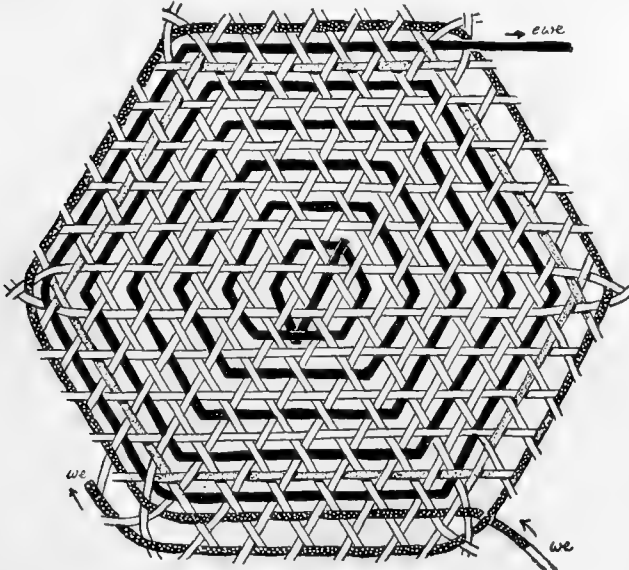


FIG. 119.—Diagram showing the base of baskets illustrated in plate 102.

warp; no extra warps are inserted, and the walls are likewise of a hexagon mesh. They are made of itiriti by men, but used by women for holding cotton in the house. Here may occasionally be seen (pl. 102; fig. 119) the first attempt (in these baskets) at restricting the size of the hexagonal interspaces by the subsequent introduction of a con-

tinuous spiral interpolated strand (an extra weft, *ewe*), commencing at the very center of the foundation. Its purpose is most probably decorative.

414. In a third example of the spiral-weft variety (fig. 120) the base varies from the type in that it is commenced with two strands looped into one another, no extra warps are introduced, and the walls are of a pentagonal (sec. 110) mesh. As a matter of fact, it is an easy method of making the kassoroa variety of crab-quake (sec. 425) when the quantity of itiriti—the material for its manufacture—is limited. Around a single central “eye,” formed of two looped strands, there is gradually built a hexagonal base, on completion of

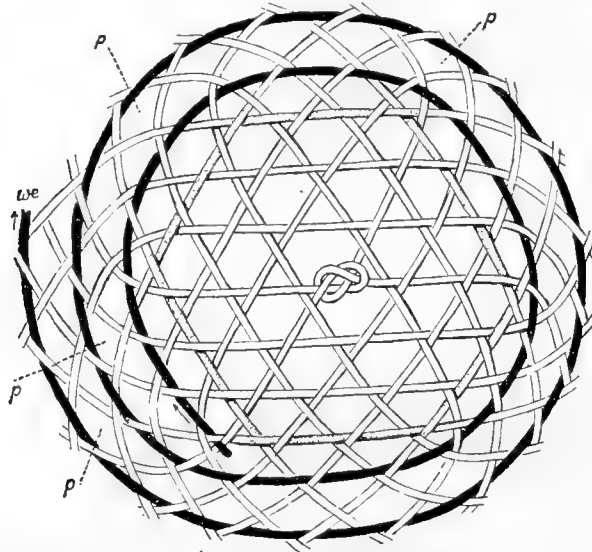


FIG. 120.—Hexagon base basket, single spiral weft. Base started with a central “eye” formed of two looped strands.

which the single continuous weft is inserted. With the weft (*we*) once in place, the walls are built up on a pentagon mesh (*p*).

415. Of the hexagon-base baskets with a multiple form of weft (i. e., a weft of separate rings) the most conspicuous that is called to mind is the farine basket of the Makusi and Wapishana (fig. 121). By means of leaves covering in the sides, farine can be carried long distances in these baskets without spilling a crumb; but they are also utilized for conveying other meal, and especially salt. With the mesh comparatively large, the walls are bulged below but narrowed toward the mouth. Made from itiriti by men.

In the bottle-shaped baskets (pl. 103 A) of the Makusi and Wapishana [also known, like the previous series with a spiral weft (sec. 413), as waikarapa and wakarad, respectively], the basketry of the

"mouth" or rather "neck" portion becomes changed from an open-work to a closework type (fig. 122). Made from itiriti by men for the women to keep their cotton in.

In the Georgetown Museum is a hexagonal base, multiple weft basket (pl. 103 B) with a lid made from an extension of a certain

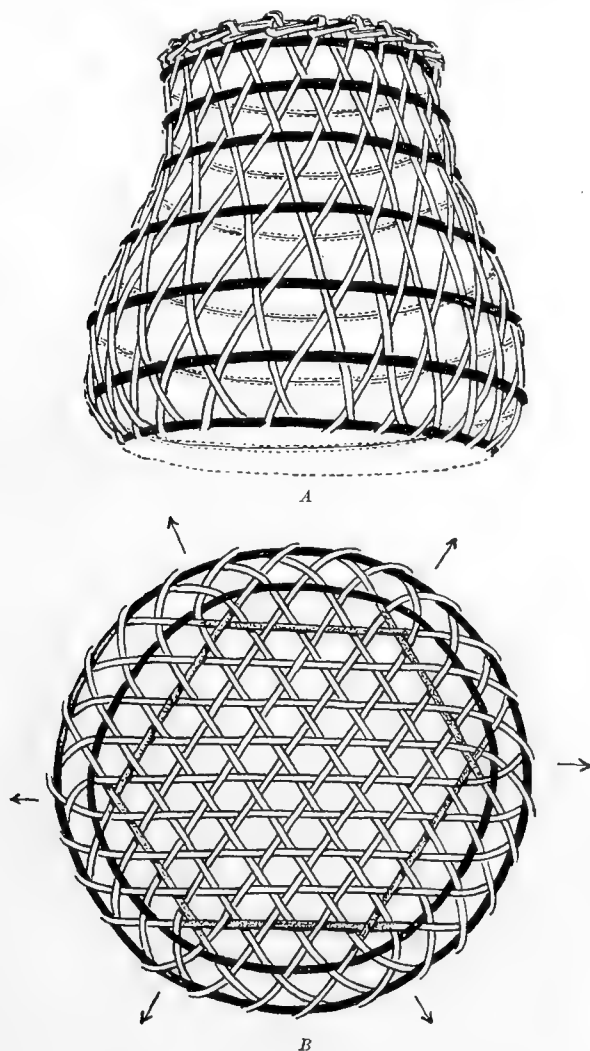


FIG. 121.—Farine basket. Makusi, Wapishana, etc. A, from side; B, from below.

number of the warps and supported by the topmost weft, which, much longer than the others, now takes on a zigzag course (see fig. 148). It is made of itiriti and probably of Makusi workmanship.

Among remaining examples of the hexagon-base baskets with multiple wefts are the extraordinarily woven baskets known as tanaba

and purawatka to Makusi and Wapishana, respectively (pl. 103 C). I have met with them also among the Patamona. They are made only by men, but it is not all men who can make them with itiriti

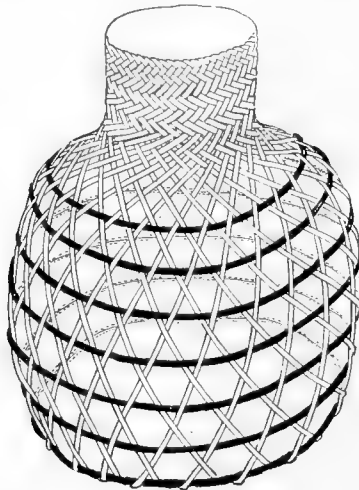


FIG. 122.—Diagram of bottle-shaped basket. (See pl. 103 A.)

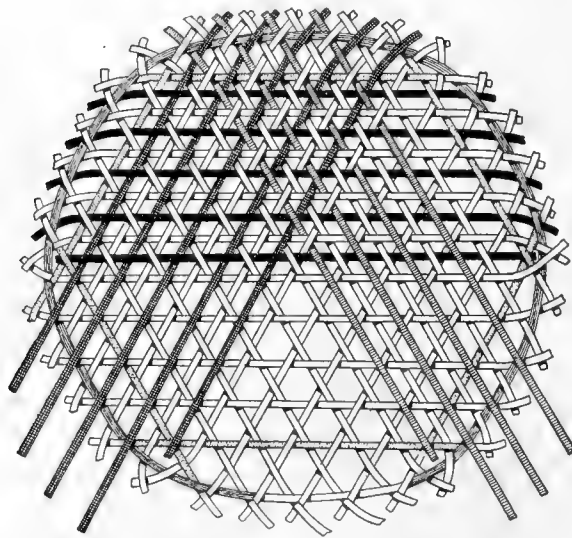
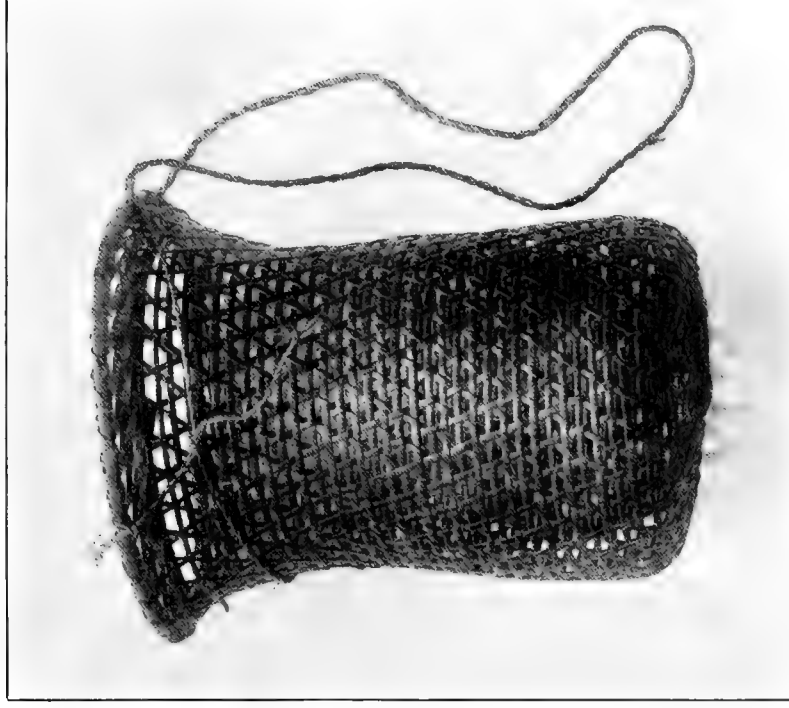
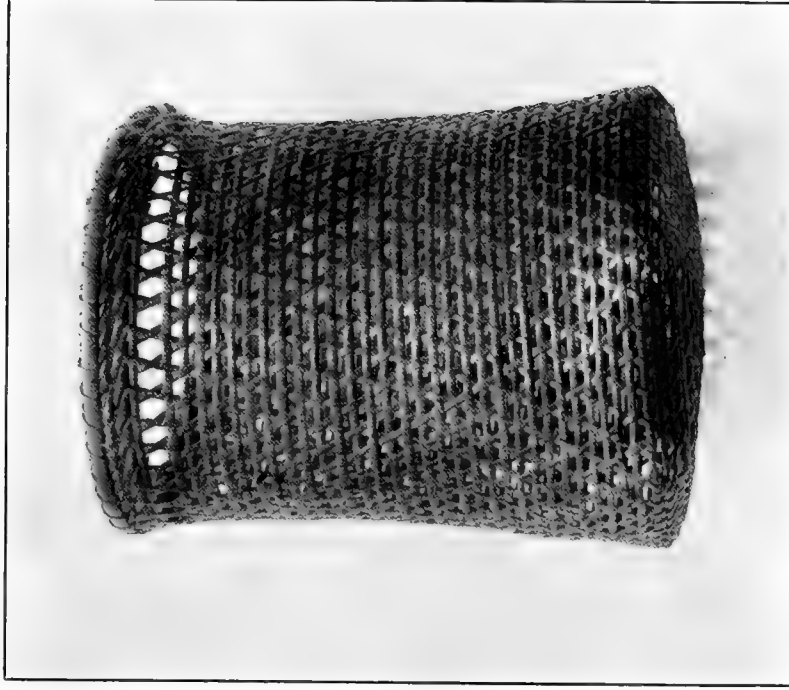
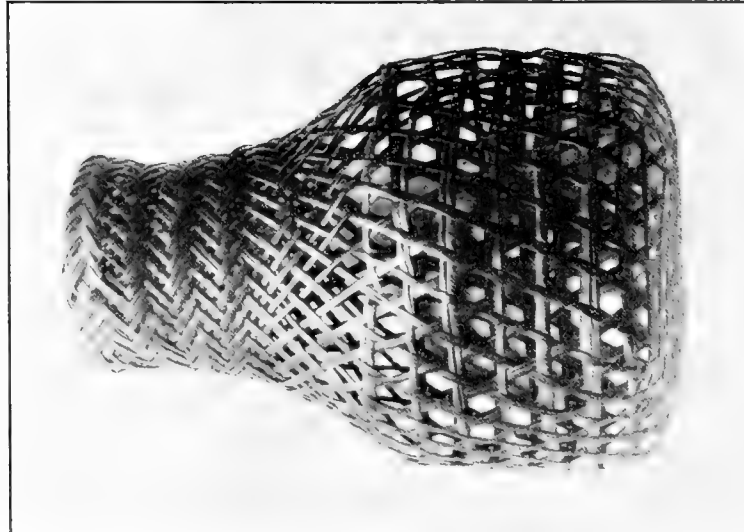


FIG. 123.—Diagram of base of basket illustrated in plate 103 C, to show the three series of interpolated strands represented black, lined, and crossed to indicate the order in which they have been inserted respectively.

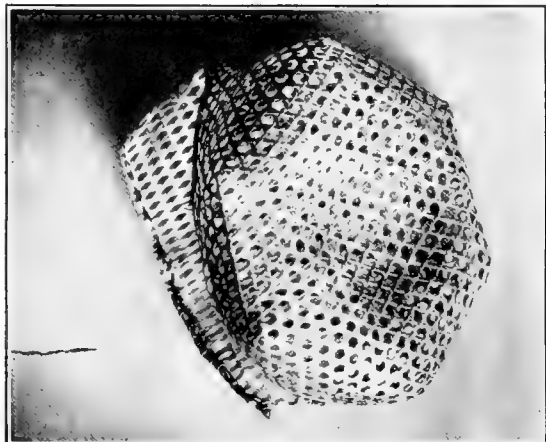
strands. They are worn only by the sterner sex over the shoulder. The size of the hexagonal interspaces is restricted by three series of interpolated strands lying in between the three series constituting their limits (figs. 123–125). These interpolated strands sometimes



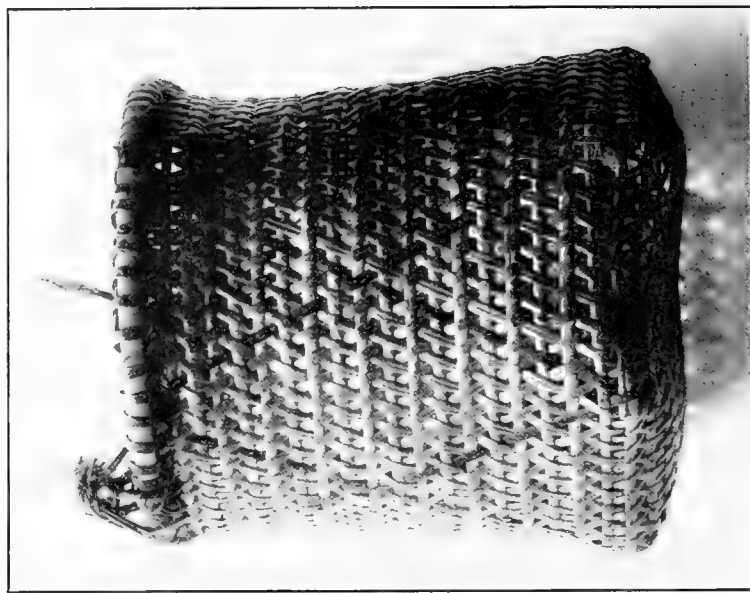
WAIKARAPA BASKETS, WITH INTERPOLATED OR SECONDARY WEFT. MAKUSI
(For diagram see fig. 119.)



A



B

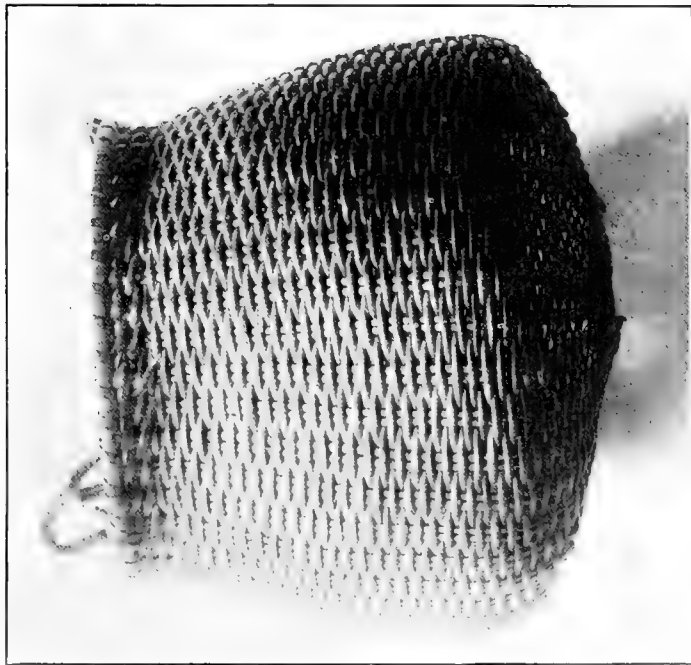


BOTTLE-SHAPE AND OTHER VARIETIES OF HEXAGON BASE BASKETS

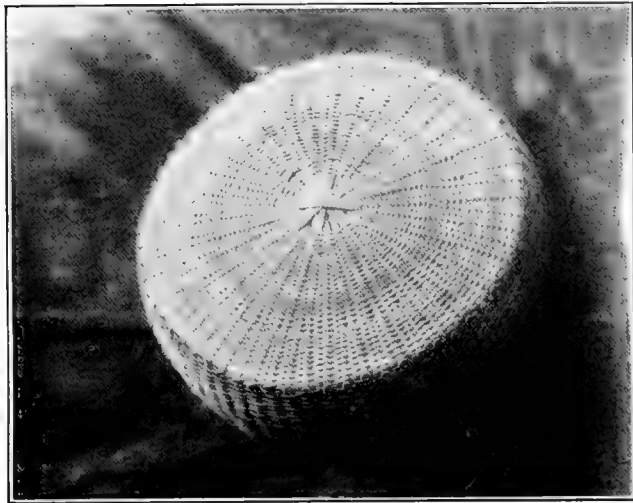
A, Hexagon base, multiple weft, bottle-shaped basket. (For diagram of similar article see fig. 122.)

B, Hexagonal base, multiple weft, basket with lid. Probably Makusi. (Georgetown Museum.)

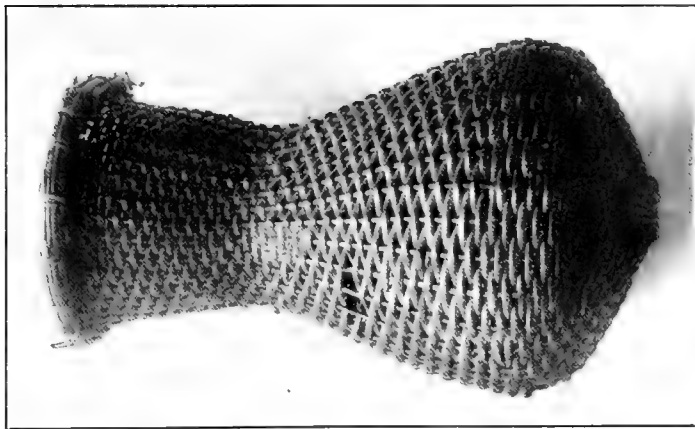
C, Tanaba basket. Makusi. (For diagram see fig. 123.)



B



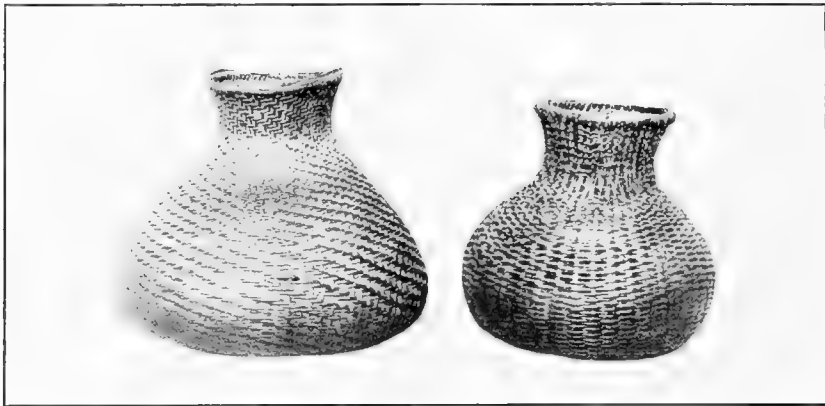
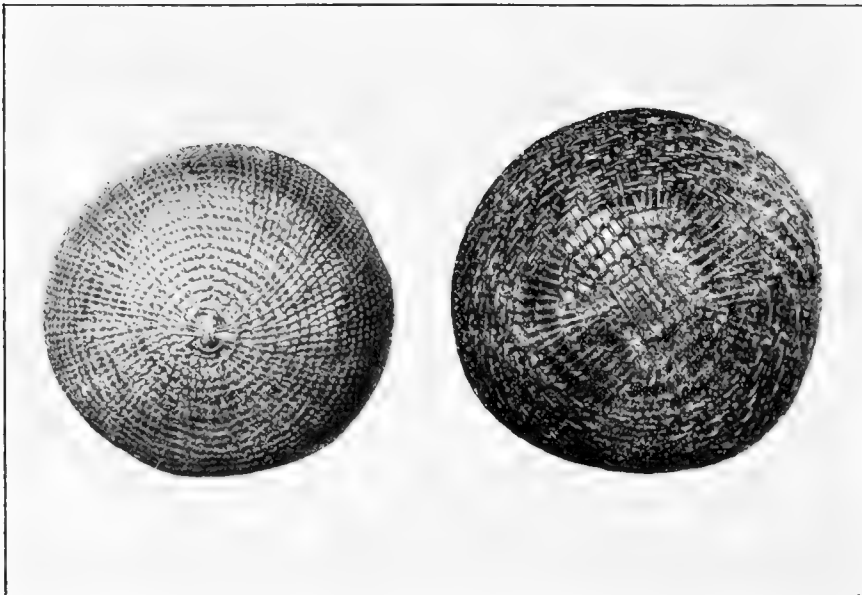
A



C

CIRCULAR BASE BASKETS

- A. Basket with circular base, radiate foundation, warps crossing at their centers in pairs. Arawak. (Georgetown Museum.) (See fig. 126.)
- B. Circular base basket, radiate foundation, warps plaited at right angles in pairs. Palamona. (See fig. 127.)
- C. Circular base basket, radiate foundation, warps in two layers at right angles. Palamona. (See fig. 128.)

*A**B**E**C**D**F**G*

EXAMPLES OF CIRCULAR BASE RADIAL PATTERN BASKETS
FROM THE UPPER RIO NEGRO (AIARY RIVER)

F represents the base of *A*, *B*, *C*, *D*; *G* represents the base of *E*. (After Koch-Grünberg.)

lie so close together as almost to change the plait from an openwork to a close one.

416. Circular or oval base type specimens of basket are built up on a foundation which may be either radiate, vertebrate, diaphragmatic, or uninclined. Of radiate patterns (pl. 104 A) perhaps the

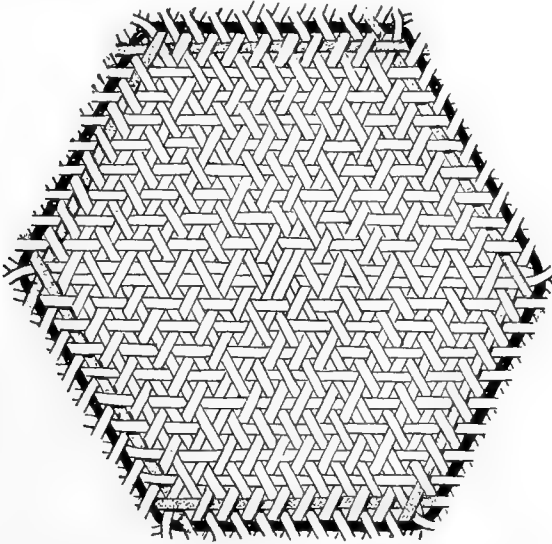


FIG. 124.—Tanaba basket, with a slight variation. The two strands at each angle of the hexagon are approximated.

commonest is that met with among the Arawak, where the warp strands, collected and superimposed in pairs, cross one another at their centers; the weft, during the passage of its first spiral, passes over or under each pair, but in its second and subsequent spirals

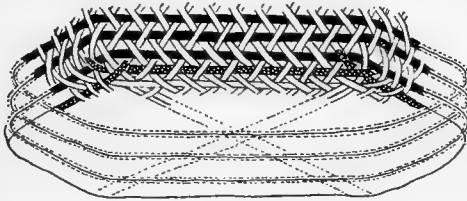


FIG. 125.—Diagram of basket illustrated in plate 103 C.

overlaps and underlaps each constituent (fig. 126). [I am very suspicious that these baskets are of foreign origin—e. g., either Negro or East Indian. There is certainly no special aboriginal Indian term applied to express the articles.] Instead of the warp strands crossing at their centers in pairs, the Patamona make a basket where they are woven into a checker (fig. 37 E) plait, one pair over and under

another (pl. 104 B; fig. 127). The same folk have yet another basket (pl. 104 C; fig. 128) with a foundation of single warp strands arranged parallel and in two layers at right angles, maintained in their relative positions by tying. Another further development

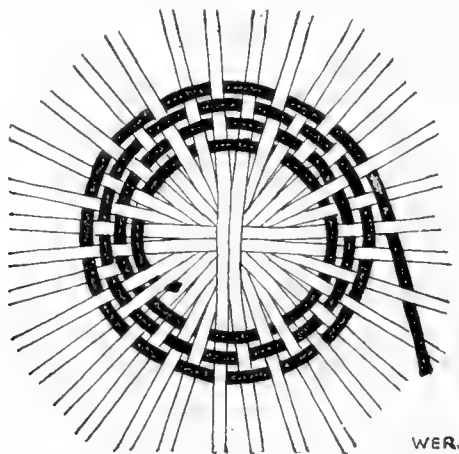


FIG. 126.—Diagram of basket shown in plate 104 A.

of such an arrangement is to be seen in certain Rio Negro baskets (pl. 105 F), where instead of the two layers two bundles are super-imposed.

A great deal of further investigation is required concerning these radiate pattern circular baskets, of which several variations in the

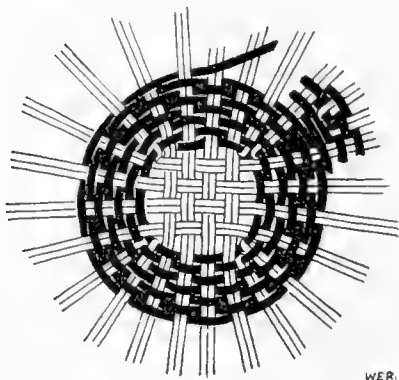


FIG. 127.—Diagram of basket shown in plate 104 B.

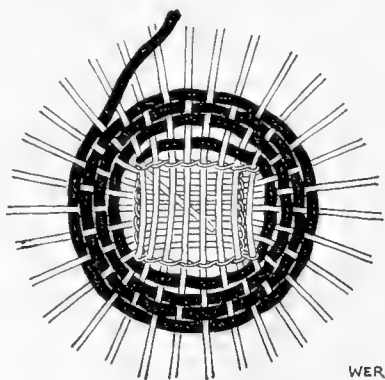


FIG. 128.—Diagram of basket shown in plates 104 C, 105 G.

weaving of the sides are to be met with; e. g., a single weft passing over and under each warp (fig. 128) or pair of warp (pl. 104 B), or every alternate pair so as to form diagonal rows (pl. 105, A, B, C, D); or a single or double weft, twined, one of the elements passing behind each warp as the weaving progresses (sec. 112).

417. The second group comprises the very curiously shaped baskets (pl. 106) for holding the cotton employed in wrapping around the butts of the blowgun poison darts. These are usually worn slung onto the quivers and are made of mamuri; less generally of itiriti.

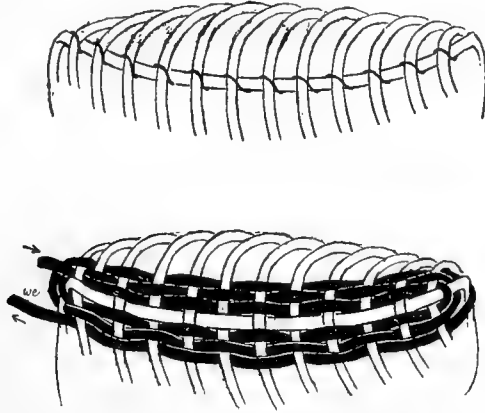


FIG. 129.—Diagram of baskets shown in plate 106.

The foundation consists of a warp somewhat after the style of a backbone crossed by ribs (fig. 129), which are either tied upon or passed under and over it, but in both cases maintained in position with the single continuous weft. To get extra convexity for the base (i. e., to make it more saddle shaped), the two corners may be tied across. Made and worn by men—Makusi, Arekuna, etc. Some-

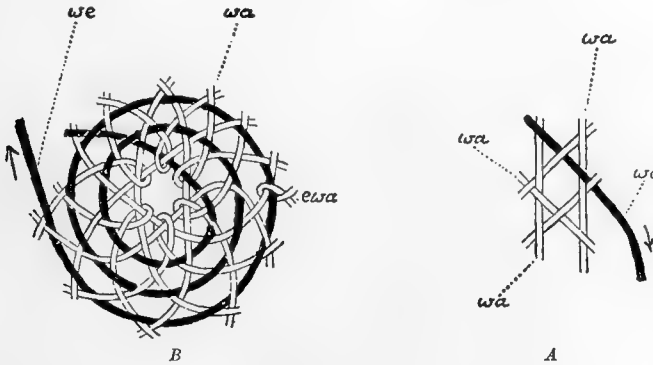


FIG. 130.—Circular base basket, diaphragm foundation, a hexagon (A). Insertion of warps (B) on completion of hexagon. Arawak.

what similar flat baskets, but larger, are made by Makusi and Wapishana from mamuri, and from a plant like the itiriti but having knots in it. They are plaited by men, but the women use them, held under the armpit, to take their food to the field. They are called pakaruma by Makusi, and daro-an, or tibid (i. e., mamuri), by Wapishana.

418. The diaphragm foundation of the circular type of base basket may be either a hexagon or a loop. The former (fig. 130) is made of six strands or warps (*wa*), one of them being extra long to form the weft (*we*), all locked together in a hexagon. At each angle of the figure is introduced another, an extra, warp or "child," as the Arawak call it (*ewa*), which becomes plaited in with the weft as it progresses around and around. Such "children" can be let in whenever the interspaces of the basket open out too much in the process of manufacture; for among the Arawak, who make it of mamuri, the mouth is very much larger than the base and hence very many of these extra warps are required. The Maku and Patamona make theirs of itiriti, and with a much smaller mouth, the completed article being almost the shape of a narrow-

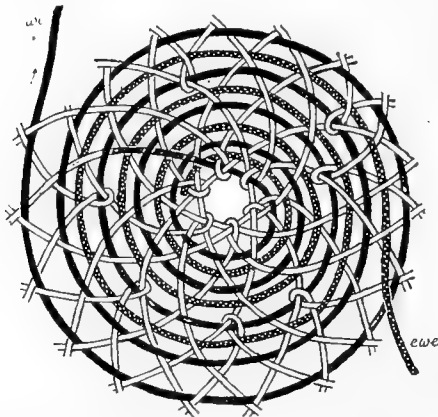
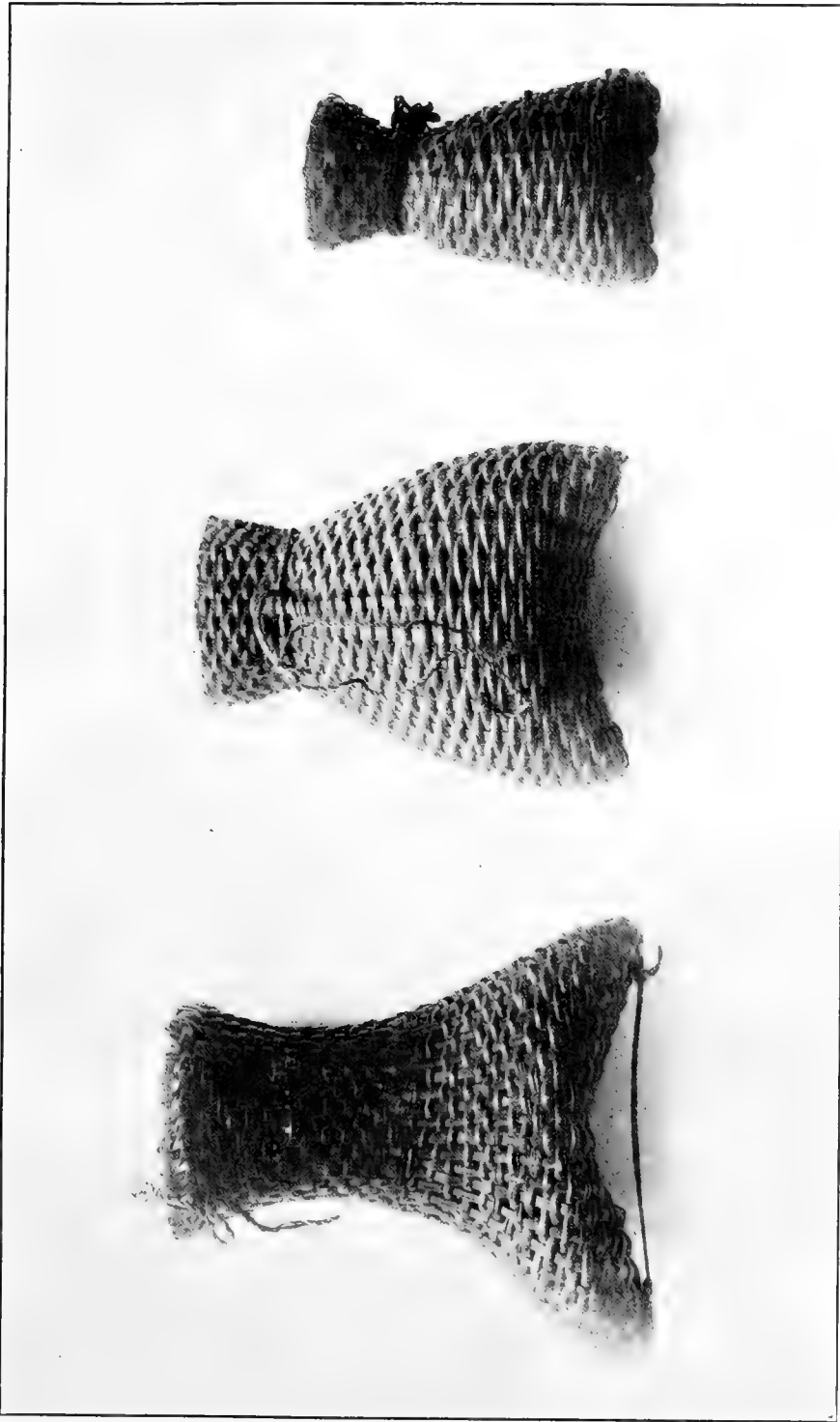


FIG. 131.—Basket similar to preceding but with an interpolated or extra weft. Patamona.

necked jug, of course minus the handle. The Patamona article is also peculiar in that the interstices are still further restricted in size by the introduction of an interpolated, secondary, or extra, weft (fig. 131 *ewe*). From the fancied resemblance of the form of foundation to the view presented by a sloth when turning its back to a visitor, the Arawak apply to this particular variety of kauuri basket (used for carrying cassava) the name of hau-inako, i. e., sloth anus.

419. The loop type of diaphragm foundation of circular base baskets (pl. 107 A) is made of two strands (fig. 132), of which one is tied into a loop (A, *a*) to form the "eye" of the basket, the other (B-E, *b*) being doubled upon itself. Now, either the extremity of the looped strand forms the weft and the two ends of the doubled one the warps (B, C, D) or the extremity of the looped strand forms a warp and the doubled one a weft and second warp (E, F). Each coil of the weft is held in position by two warps running simultaneously; and alone in these baskets I have seen the weft make a left-hand spiral instead of the usual right-hand one. Made of split mamuri, it is said to be the original form of the eye-socket basket—the basket that "came after," as the interpreter said, which will be next described. (I have only seen one old Warrau woman make them, but they appear common among the Carib of the Barima and Barama Rivers.)

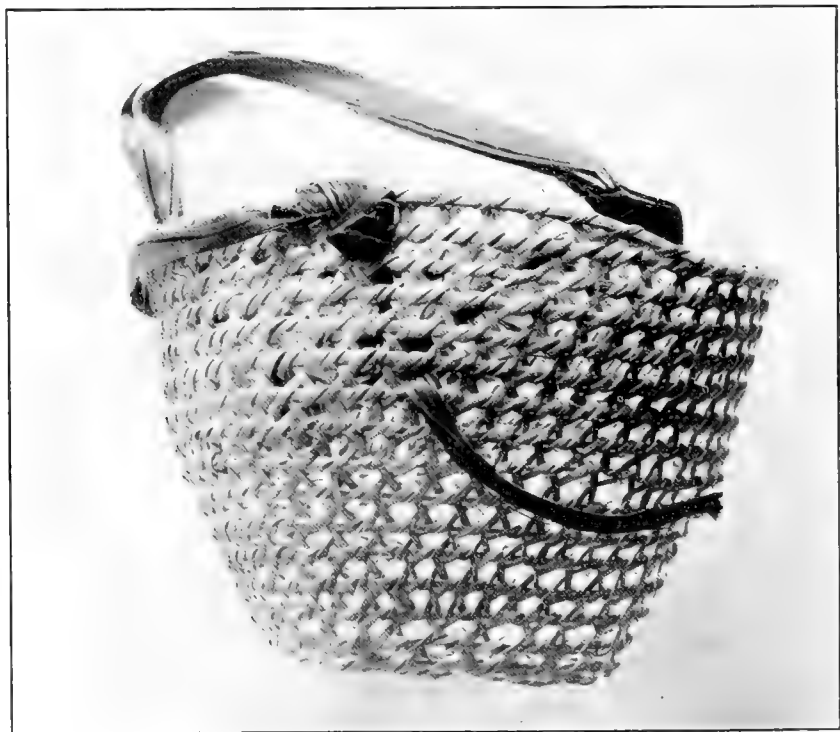


OVAL BASE. VERTEBRATE FOUNDATION BASKETS. AREKUNA, PATAMONA, MAKUSI, ETC.

(For diagram see fig. 129.)



A, Circular base basket, diaphragm foundation, loop type. Warrau. (For diagram see fig. 132.)



B, The bakoké or eye socket oval base basket of the Arawak and Warrau. (For diagram, see fig. 133.)

CIRCULAR AND OVAL BASE BASKETS

420. This is the specialized split-mamuri basket of the Arawak known as the bakoké (pl. 107 B), the word signifying an eye socket, to the general contour of which the base of the completed article has been likened. The oval foundation (fig. 133 A) is formed of a single strand, the weft (*we*) looped upon itself to a length adapted for the size required, and fixed in position by a warp (*wa*), the ends of

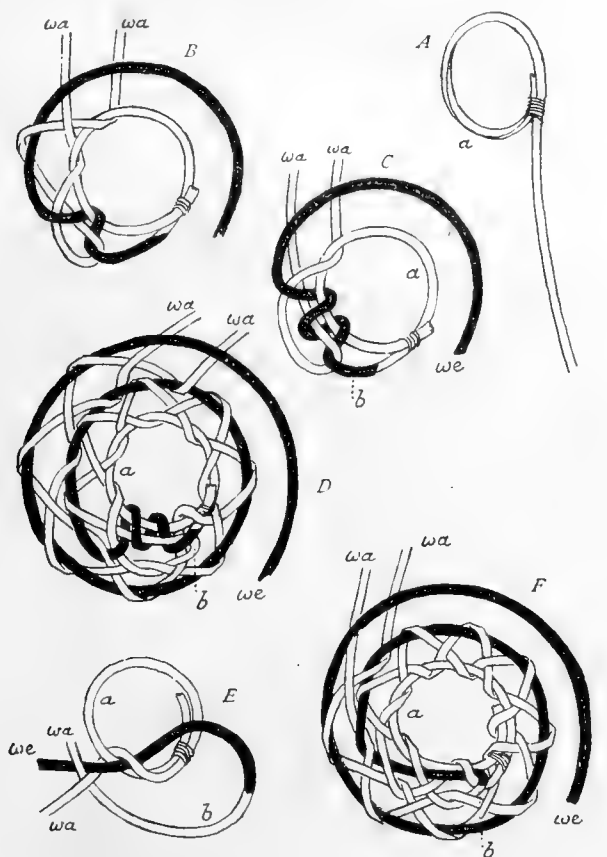


FIG. 132.—Diagram of basket shown in plate 107 A.

WER

which continue to lock the weft as it proceeds round and round in the course of manufacture (B, C). As a matter of fact, the two ends of the one warp constitute practically two separate warps. Made by men and women, but used by the latter for carrying cassava. It is of at least two distinct shapes, according as it is manufactured by Arawak and Warrau, or by Carib.

421. The uninclosed foundation circular or oval base baskets include two series—one in which the warp strands, running parallel

with the length of the basket, are plaited in a twined fashion (sec. 112), and another where the strands are crossed and form pentagons (sec. 110). The former will include the basket cages or creels (pl. 108 A) employed in catching fish in the smaller streams (sec. 204).

I have already described the technical details of the somewhat complicated Pomeroon district basket cage (fig. 134) as follows:

It is made from split mamuri, and consists (A-D) of a more or less cylindrical body (*a*) and a cone-shaped head (*b*) made separately, but finally joined by inserting the latter into the former and "sewing" them in position. The manufacture of the body starts (B) with

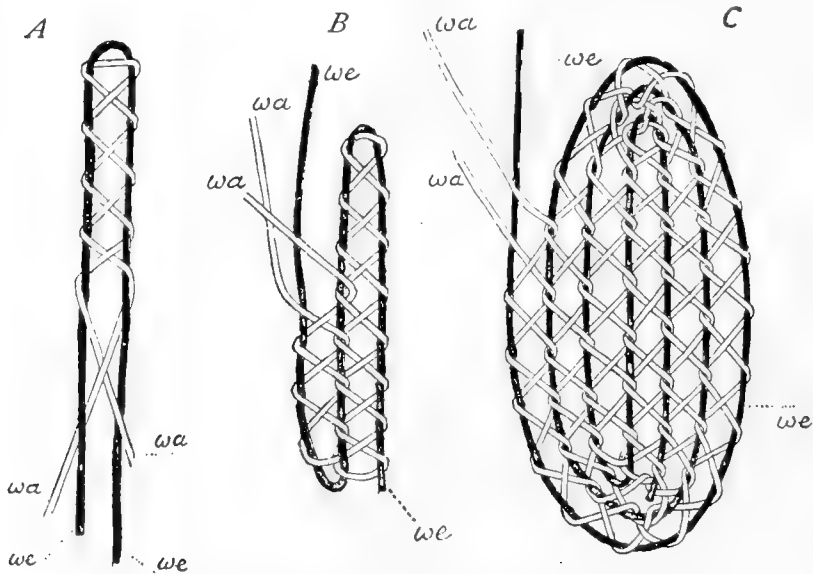


FIG. 133.—Diagram of bakoké oval-base basket shown in plate 107 B.

the tail end (*c*) by means of a ring (*d*) on to which the warps are fixed. Each warp (*e*), at least twice the length of cylinder to be made, is doubled on itself at its middle, where it is attached to the tail ring by looping over and tying, or by tying direct (C). The main weft (B, *f*) is now introduced and made to pass, in the course of its spiral progress, alternately over and under every half warp. It is kept in position by means of a thinner strip (*g*) woven alternately in front and behind it; i. e., the ordinary wrapped type of plait (sec. 113). Each half warp throughout its whole length remains either under or over the main weft strand. Should the warp interspaces become too open, a new one can be easily inserted (*h*). The body is finished off either on the main weft itself or else elaborated with a lip projecting outward, similar to that sometimes met with on the head.

The construction of the head is similar (A), but commencing with a comparatively larger ring for the mouth (*i*), and weaving the texture more closely so as to obtain the cone-shaped neck (*k*). Furthermore, the projecting strands are left free so as to interlace more or less, and thus constitute a throat (*l*) through which the fish can easily wriggle themselves in to get at the bait beyond, but once in can not get out again. Many fish cages are to be seen (D) where

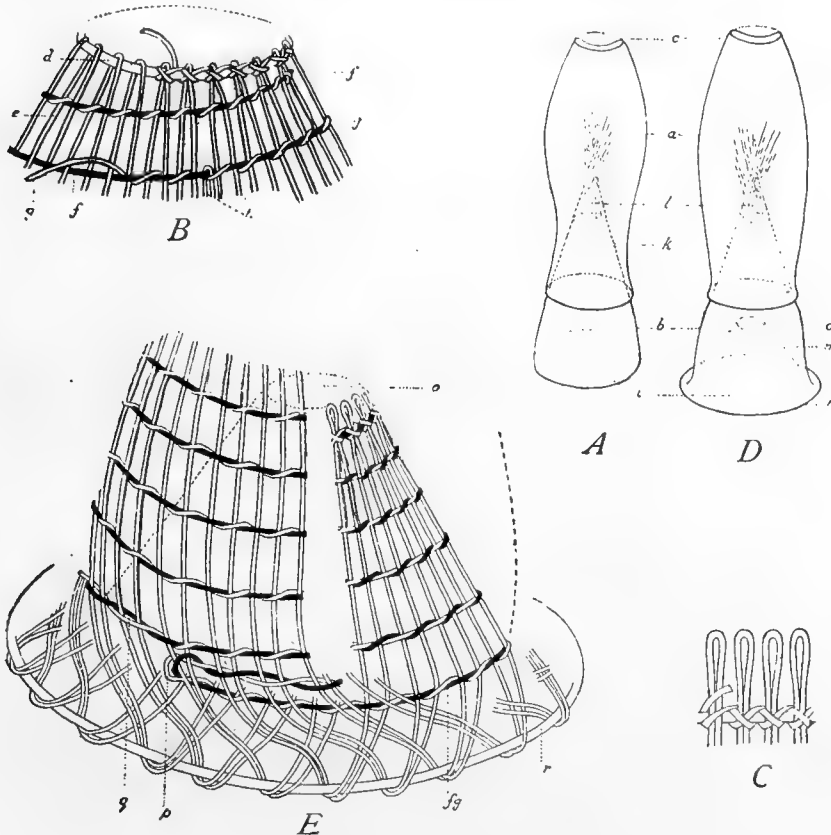


FIG. 134.—Details of the Pomeroon district fish creel.

the head is constructed with a lip (*m*) projecting inward and outward so as to form an inner (*o*) and outer (*n*) margin to the mouth. Such construction (E) commences with the inner margin (*o*), after the manner described (in making the body), until the edge of the mouth is reached, when the weft (*f*, *g*) is turned back on itself (*p*), to take up in turn every pair of half warps throughout an entire circuit (*p*, *q*) of the article. These pairs are not, however, taken up direct, but only after having been woven over a large mouth ring (*r*)

and passed respectively over and under the two immediately succeeding pairs. On completion of the circuit the weft passes alternately

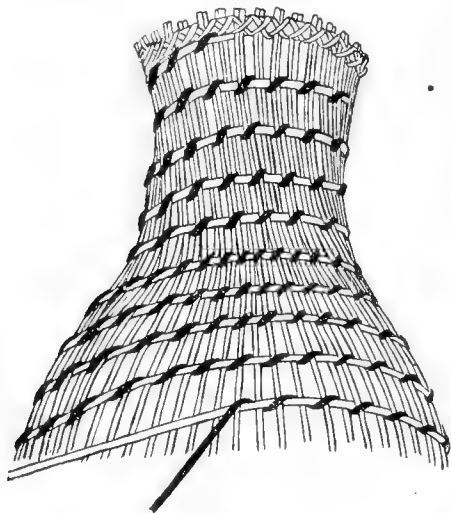


FIG. 135.—Base of Patamona fish creel shown in plate 108 A.

under and over every half warp in the usual spiral manner, with the result that the inclosing head comes to be first of all constructed, then the conical neck, and finally the throat (WER, IV).

The biggest cage met with in this district is about $3\frac{1}{2}$ feet long and wide in proportion; the smallest that I have come across is a little over 2 feet. It will be noted that the technique of the Pomeroon (Arawak) article differs from that of the Rio Negro in having one continuous spiral weft, whereas the latter is usually, though not

always (KG, II, 41), built up on a series of circular ones (pl. 50 B). But both on the Pomeroon and elsewhere the creels may be of a much simpler type (sec. 204).

422. Examples of the second series of the uninclosed foundation circular-base baskets—those with the pentagonal plaited walls—are to be seen in the large cylindrical itiriti-strand baskets of the Akawai. These are constructed with a continuous spiral weft and are open at both ends (fig. 136). They are up to $2\frac{1}{2}$ feet long, with

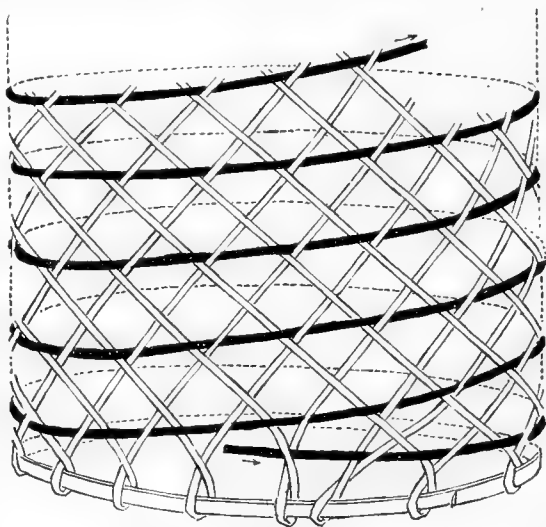
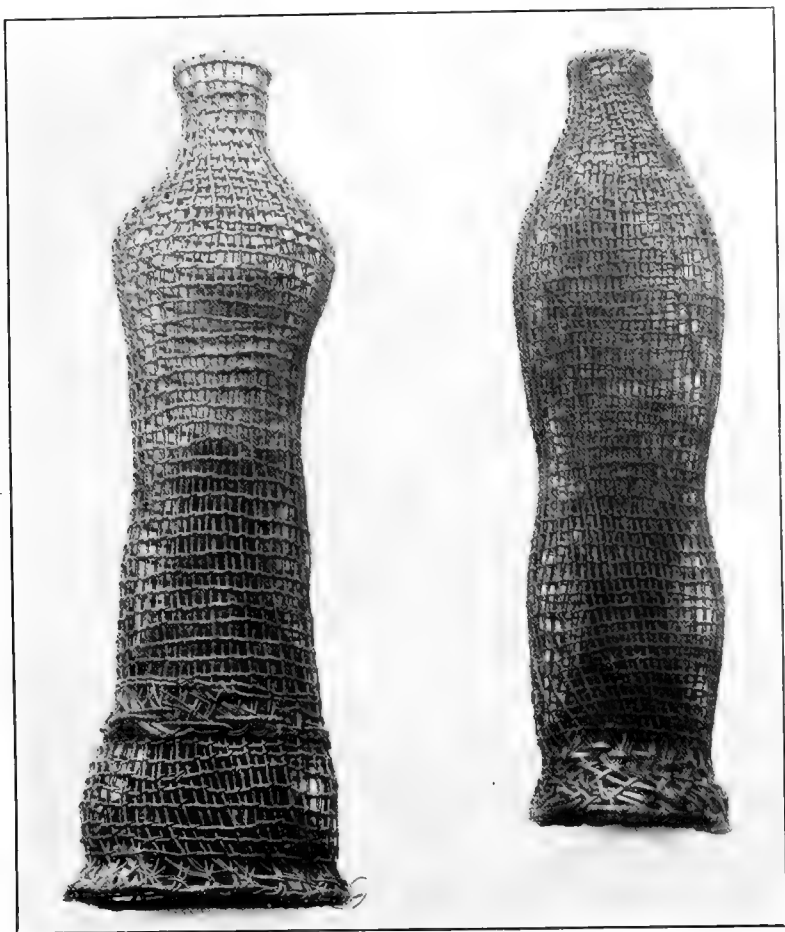
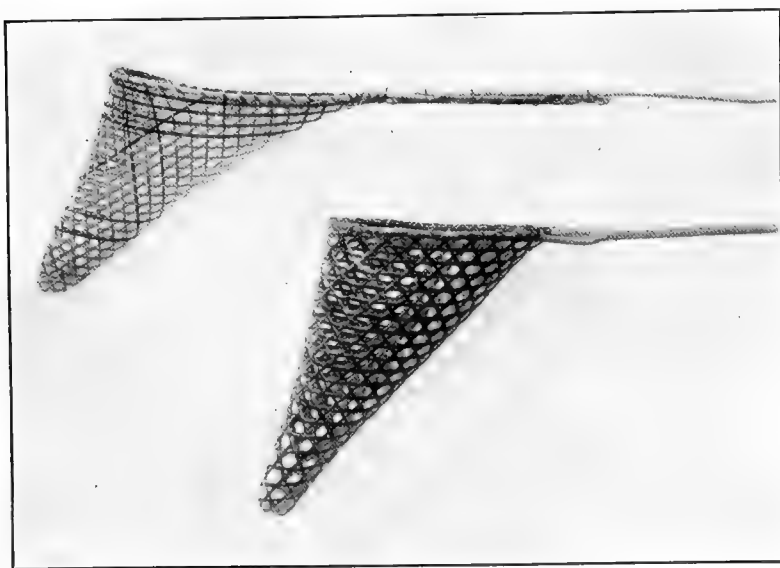


FIG. 136.—Diagram of cylindrical itiriti-strand basket.

a diameter of about 9 or 10 inches, and when put to use (e. g., transport of "buck" yams) their extremities are strapped across with itiriti or bark strands.

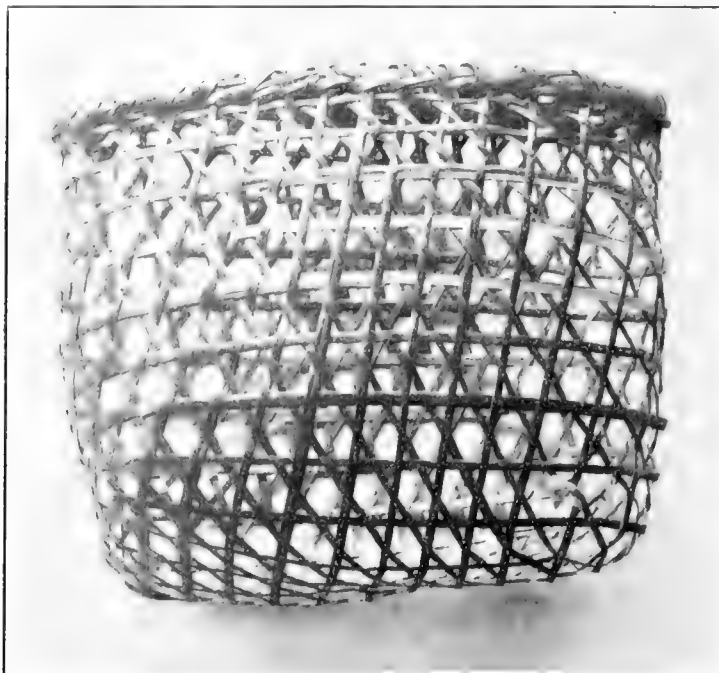


a *b*
A, Fish creels: *a*, double funneled; *b*, single funneled. Patamona. (For diagram see figs. 134, 135.)



B, Conical base landing net baskets. (For diagram see fig. 137.)

CREELS AND LANDING NETS



A. Rectangular open-work hexagonal-mesh flat-base basket. Wapishana. (For diagram see fig. 147.)



B. The Kamaioyo close-work checker-pattern conical-base basket. (For diagram see fig. 138.)

FLAT BASE AND CONICAL BASE BASKETS

423. The construction of the conical-base landing-net basket (pl. 108 B) of the Carib, Akawai, Arawak, Warrau, etc., is somewhat peculiar. Starting with six itiriti warps (*wa*) plaited into a hexagon (fig. 137 A) a weft (*we*) is inserted, but its extremities, so soon as they cross one another on the lower edge of the basket, become additional (extra) warps (*ewa*). Weft after weft is thus added, the utilization of their extremities as warps causing the basket to have a longer slope on the lower surface than on the upper. The completed pattern is one of hexagons (WER, iv). The basket itself has somewhat the appearance of an old form of nightcap and is attached within and alongside of the two limbs of a forked stick that may sometimes reach to a length of 6 feet. To the Arawak it is known as *shipi*; to the Warrau as *basso*. It is used for catching the fish floating

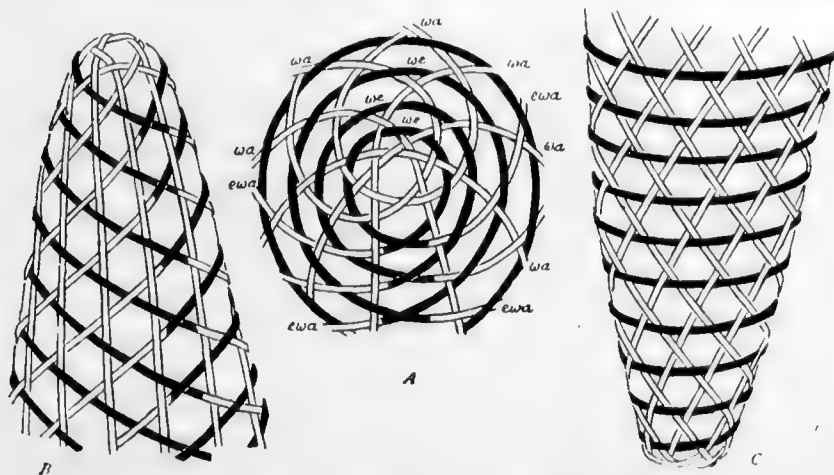


FIG. 137.—Diagram showing construction of conical-base landing-net basket.

on the water surface after being intoxicated with one or other of the various fish poisons.

424. The *kamaiyo* basket of the Arawak is similarly the only example that I can bring forward of a closework conical-base basket (pl. 109 B). It is an article but rarely used now, the few examples met with being usually in the possession of the older folk and of the medicine men. Employed as a strainer, the Arawak required it in the manufacture of black *paiwarri* (sec. 257), not with other drinks. Owing to its conical base, it has no present-day utility as a receptacle for storing articles without the suspending string attached to opposite sides of its upper circular edge. The manufacture of the foundation is comparatively simple. Operations are commenced by making a square mat (fig. 138 A), the plaiting of which consists in the repetition of passing a single horizontal strand (*a*) over and under a set of three vertically arranged ones (*b*). Once the square, which

varies with the depth of basket required, is completed, a special strand (*s*) is passed in similar fashion around two contiguous sides, the point of contiguity ultimately forming the conical extremity (*e*) of the finished article. The next procedure is to plait together the projecting strands of these contiguous sides in the same way—i. e., one under and over three (*B*)—throughout their whole extent. When the farther corners (*d, e*) are reached the conical foundation

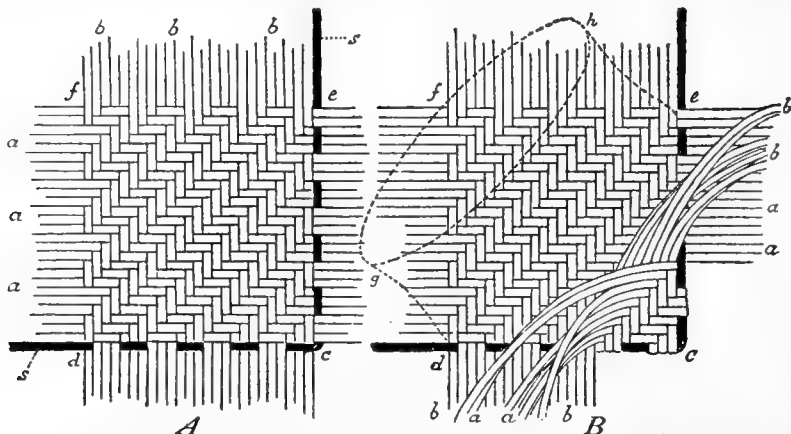


FIG. 138.—Diagram of closework conical-base basket shown in plate 109 B.

(*dce*) of the basket is completed, its upper circular portion (*gh*) being finally brought into existence by plaiting the strands projecting from the lower area just manufactured with the strands projecting from the two sides (*df, ef*), which were originally left free by the special strand (*s*). The upper circular portion of the basket may be extended at discretion and woven into various patterns (WER, v).

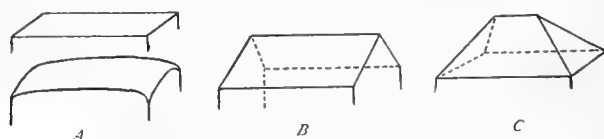


FIG. 139.—Types of rectangular base baskets.

A cone-shaped basket was used for filtering during the process of preparing salt in Cayenne (sec. 250).

425. Where the base of the basket is a rectangle, this may remain flat, or be constructed in such a way as to have two opposite, or all four, sides raised; i. e., the rectangular base may be compared with a roof (fig. 139) which is more or less flat (A), gabled (B), or hipped (C). For convenience of description only I propose discussing these three shapes in the reverse order just given. Hipped baskets are all openwork, with hexagonal or pentagonal interspaces, the type specimen being the *kuá-ke* of the Arawak (pl. 110 A), made

by both men and women, and used primarily, I believe, for carrying crabs (*kuá*). It can also often serve duty as a cage for animals and birds while being tamed. The Indian term has given rise to the word *quake*, a Creole word applied to other kinds of open-work basket indiscriminately. Schomburgk called it a *queeck* (ScG, 246). Built up from the outside, unscrapped, portions of split *itiriti* stems, the foundation is formed by binding a varying number of strands diagonally across a pair of others placed parallel (fig. 140), the extremities of all forming ultimately individual warps. The number so

employed will depend upon the size of the basket required. Two or three warps are plaited around the length and breadth of the original pair of strands, and so keep the crossed ones in position.

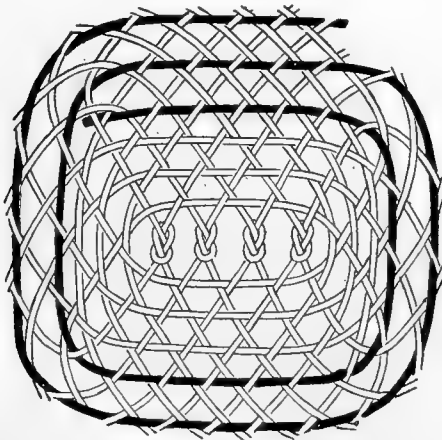


FIG. 141.—Rectangular hipped-base basket, spiral weft. Commenced by looping together the diagonally placed strands in pairs.

ones in pairs, the number of such loops varying from two to six or more, according to the size of basket (fig. 141). From the supposed resemblance of these loops at their junctions to the eyes of a

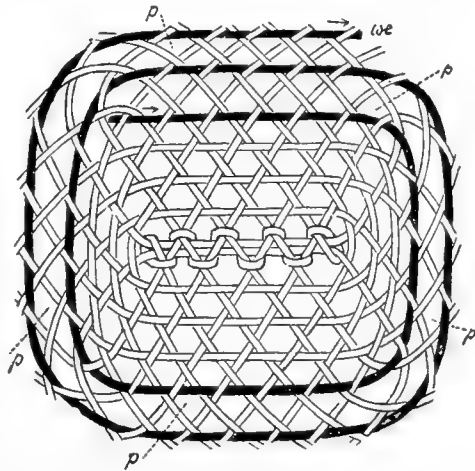


FIG. 140.—Rectangular hipped-base basket, spiral weft. Commenced with two parallel strands crossed by diagonal ones. (Pl. 110 A.)

The weft is next introduced, in the form of a very long strand (*we*) and the plait work proceeded with, in a pentagon mesh (sec. 110) until the limits of what will finally be the mouth are reached. The latter is finished off by weaving other pieces of strand twice round the projecting warps, which are bent down upon one another for the purpose. A variation in the foundation can be made by the same people without any parallel strands by looping together the diagonally placed

certain fish (kassoroa), found on low-water mud banks (akin to that known to English boys as the "jumper" or "four-eyes"), this form of quake is specialized by the Arawak as the kassoroa-akushi (i. e., fish eye); the latter being the figurative term for an interspace (WER, iv). For a method of making this form of crab quake when the itiriti is limited see section 414.

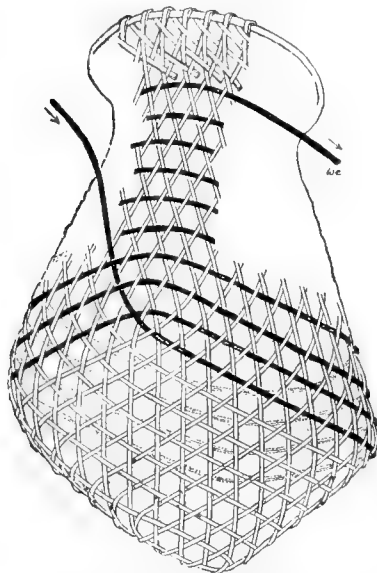


FIG. 142.—Rectangular hipped-base basket, spiral weft. The proximal extremity of the weft acts as a warp. (Pl. 110 B.)

the more careful bordering around the mouth, and, maybe, the insertion of an interpolated, secondary, or extra weft (fig. 144).

426. In the relatively much smaller specimens of the Makusi for holding knickknacks, cotton, etc. (pl. 110 B), the foundation is somewhat simpler, both binding and looping of the initial strands being dispensed with (figs. 142, 143). These baskets also show further variation in the retention of a hexagonal mesh throughout, in the use of properly prepared itiriti strands, in the formation of a distinct neck,

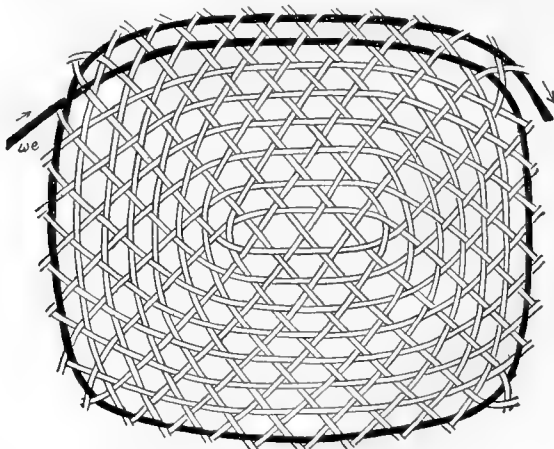
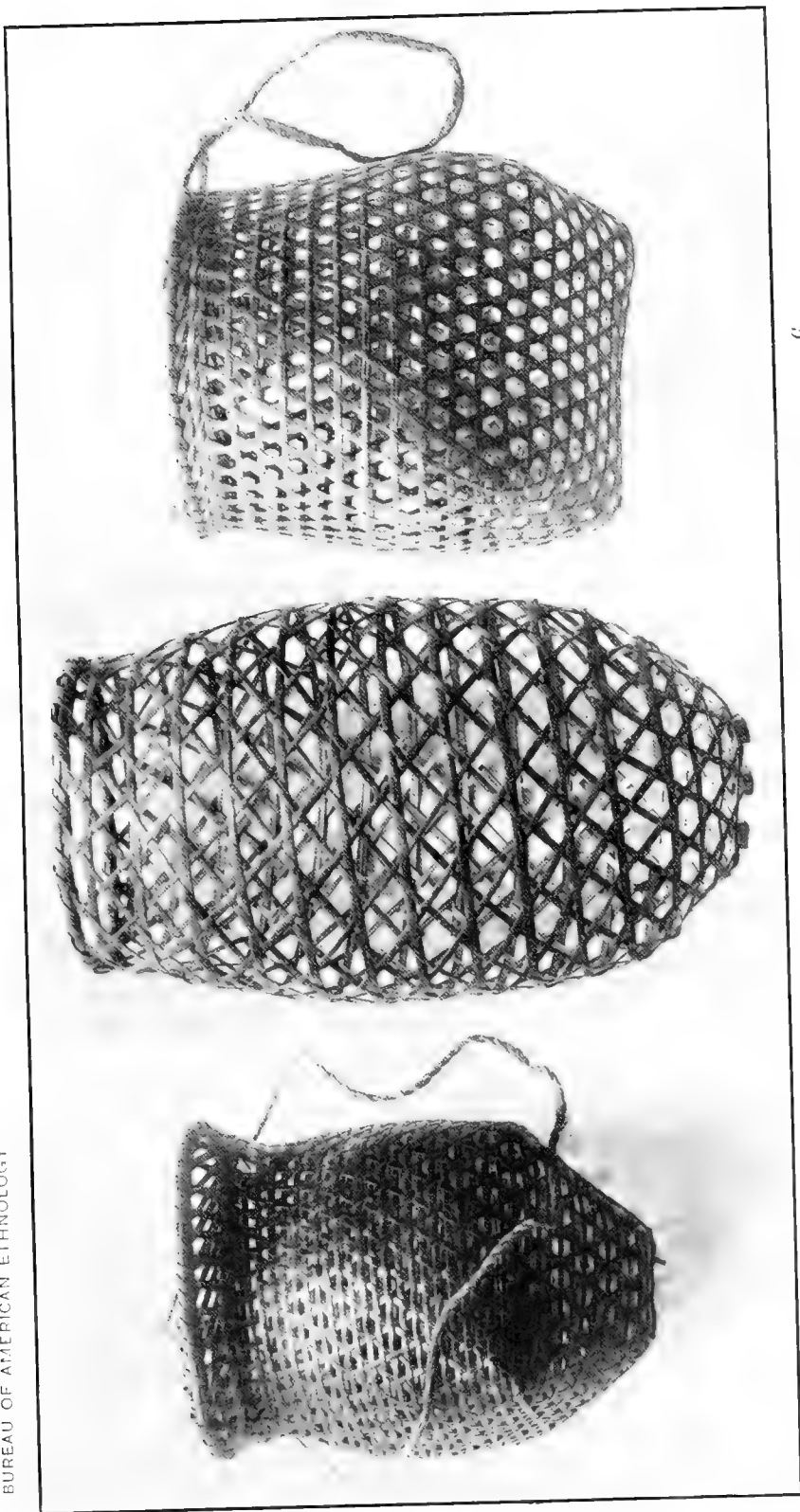


FIG. 143.—Base of preceding before introduction of secondary weft.

427. The only examples of a gabled form of rectangular base (pl. 110 C) come from the Makusi, and, except in the increased number of hexagonal interspaces in the first row, are practically identical with



A

B

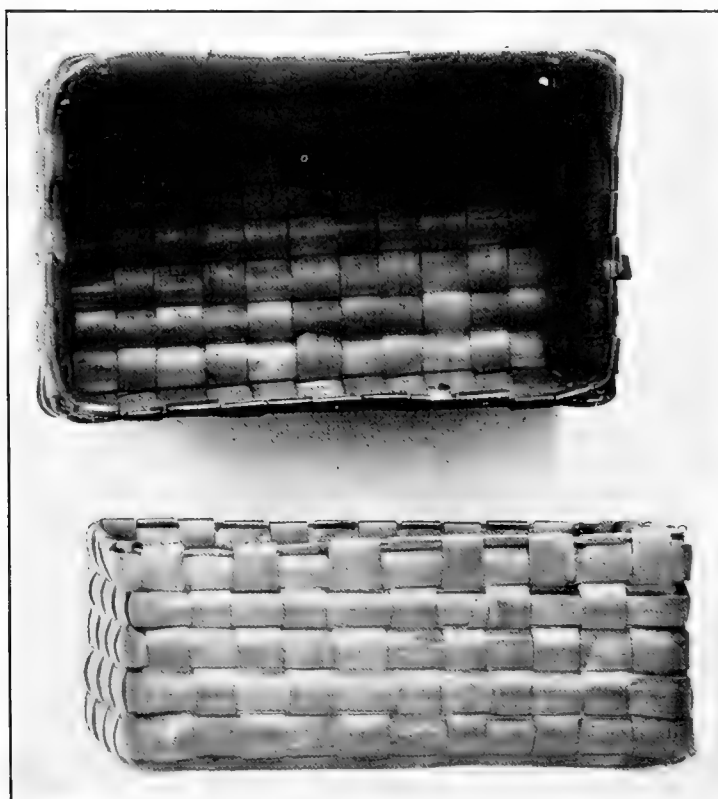
C

RECTANGULAR HIPPERED AND GABLED BASE BASKETS

- A. Basket with rectangular hippered base, spiral weft, pentagonal mesh. The "quake" of the Domerara Crooles. (For diagram see figs. 140, 141.)
 B. Basket with rectangular hippered base, spiral weft, hexagonal mesh, and a secondary or interpolated weft. (For diagram see figs. 142, 143, 144.)
 C. Basket with rectangular gabled base, spiral weft and hexagon mesh. Makusi. (For diagram see figs. 145, 146.)



A, Basket with rectangular flat base; open work, crossed quadrilateral mesh; multiple weft. Makusi.



B, Basket with rectangular flat base; close work checker pattern, multiple weft. The cover is of similar construction.

RECTANGULAR FLAT BASE BASKETS

the baskets that have just been described. A comparison between the diagrams (figs. 142, 143, and figs. 145, 146) will render this statement clear. On the other hand, an interpolated weft does not seem to be ever employed here.

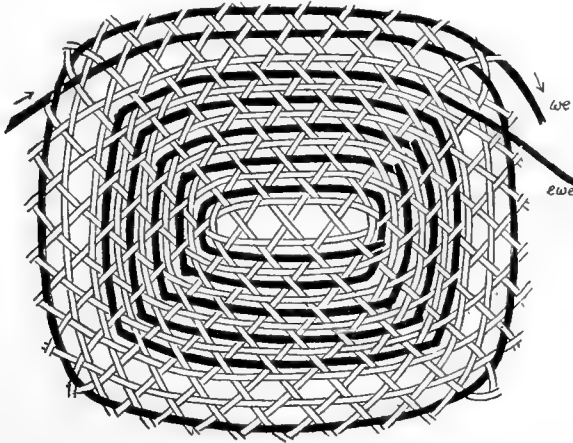


FIG. 144.—Base of preceding after introduction of secondary weft.

428. Baskets with a rectangular more or less flat base can be very conveniently classified according as the mesh is an open or close work one. In the former category the mesh is of the ordinary hexagon

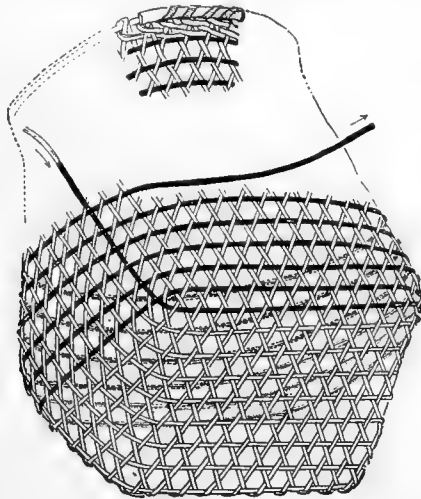


FIG. 145.—Diagram of basket shown in plate 110 C.

type (fig. 39 B), as in the Wapishana articles, or of a crossed quadrilateral one (fig. 40 B), as in certain Makusi specimens. The Wapishana basket, built from strands of the "pimpler" palms (*Astro-*

caryum sp.) on a foundation represented in the diagram (fig. 147), may have a lid attached. This lid is but an extension of one of

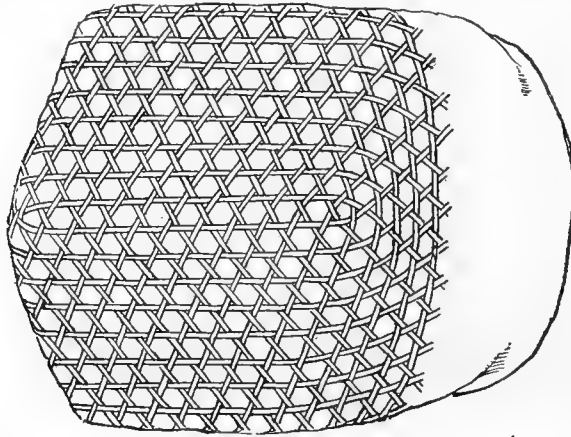


FIG. 146.—Base of preceding.

the longer sides and is supported by the weft, which, upon leaving the top of the basket proper, discards its spiral form to assume a zig-zag serpentine course (fig. 148).

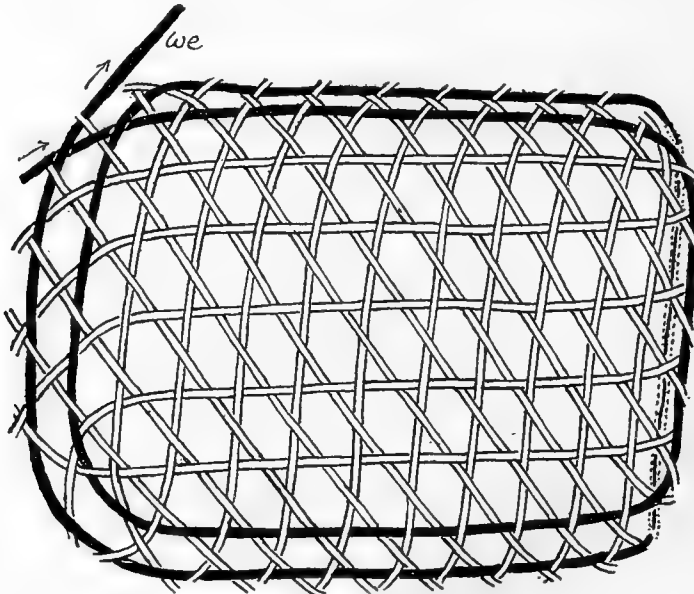


FIG. 147.—Diagram of Wapishana basket shown in plate 109 A.

429. In the crossed quadrilateral type of mesh the square foundation is formed of vertical and horizontal sets of strands crossed by diagonal ones (pl. 111 A; fig. 149), the initial "key" to its manufacture being two strands crossed at right angles and fixed in position

by two pairs of diagonal ones (sec. 111). The size of the base is limited by the first weft, which is here of the annular or multiple type.

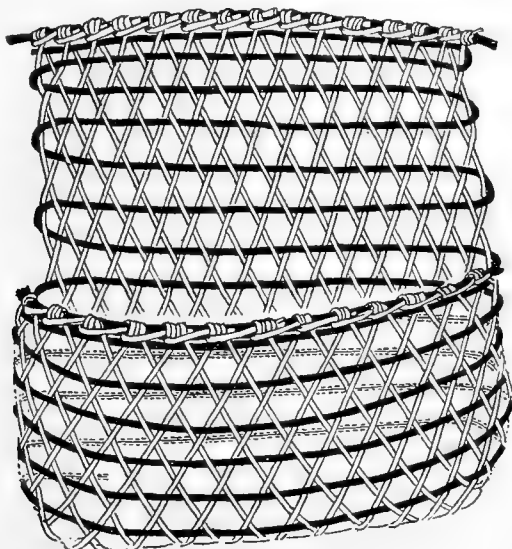


FIG. 148.—Diagram of basket similar to that shown in plate 109 A, but with a lid.

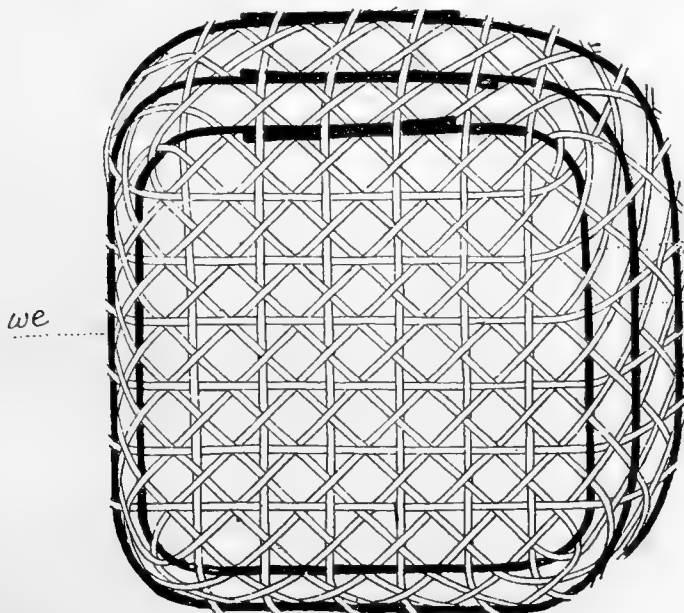


FIG. 149.—Diagram of basket shown in plate 111 A.

Indeed, the three characteristics of this basket are the pattern of mesh (distinctive), the multiple weft, and the square foundation. The sides are now built up and proportionately raised, as another

and another of such wefts is successively brought into requisition. Made from itiriti, by Makusi, though it would seem to have been made formerly by the Arawak. The latter call it *kerémi*, a name given to a certain salt-water fish, the scales of which the interspaces bear comparison with. The completed article may thus be called by them *kerémi-uda* (scale) or *kerémi-akushi* (eye, interspace).

430. Rectangular flat-base, closework baskets are either of a checker (sec. 106), wicker (sec. 107), or twilled (sec. 108) pattern. The checker baskets (pl. 111 B) are made from the leaf of the *cho-wa*, a palm somewhat resembling a small *kokerit*, which I have not succeeded in identifying, and are interesting in that, to procure increased strength and stability, each strand element consists of two or more superimposed strips. Once the base has been completed, somewhat after the style of the similarly constructed closework mats

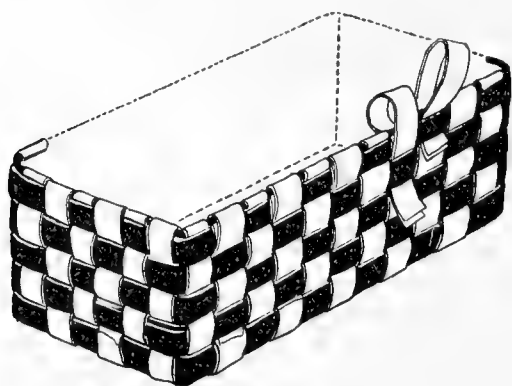
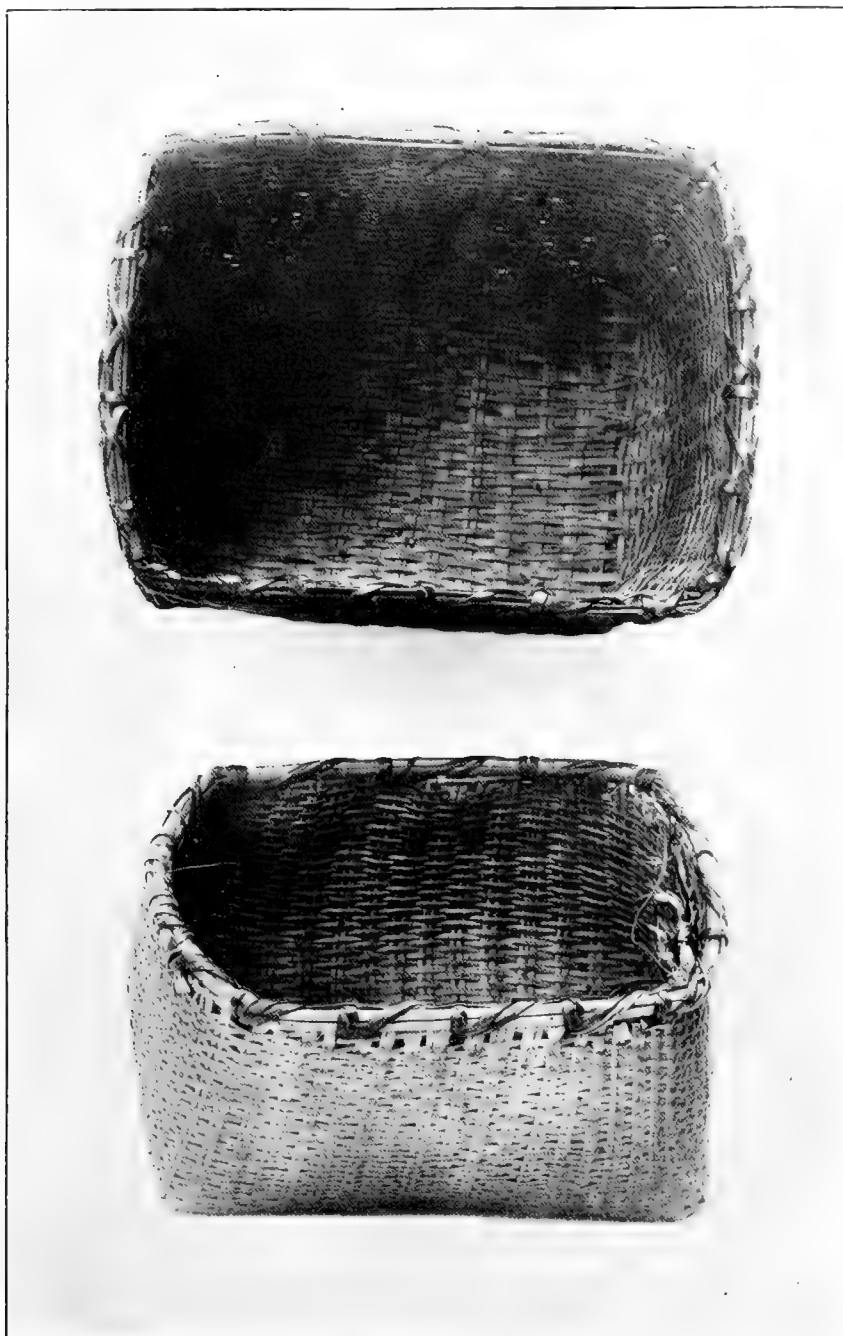


FIG. 150.—Diagram of checker pattern basket shown in plate 111 B.

(sec. 395), the projecting ends are turned up and maintained in position by the multiple wefts, which gradually help in building up the sides (fig. 150). The final weft is in the form of a thin cane strip, around which the ends of the warps are bent downward and backward again upon themselves. The cover is made on an identical pat-

tern, but larger, so as to insure a good fit, the two together forming what the Creoles call a "pegall" (sec. 433). Makusi, and perhaps Wapishana.

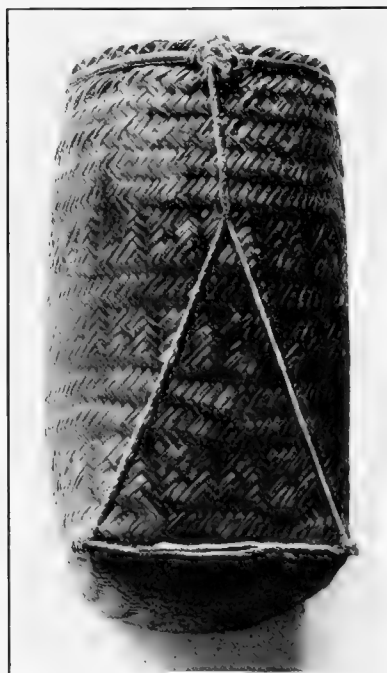
431. In the group distinguished by the base being plaited in the wicker (sec. 107) or "armadillo" style—a name given it by the Arawak in fancied resemblance to the markings on the creature's shell—the basket is either complete and single in itself, with a smaller oval mouth, or made with a rectangular top, the same size as the bottom, and in duplicate, one moiety acting as tray, and the other (built very slightly larger) as cover, together constituting what is known as a *pegall* (pl. 112). Made of itiriti. Once the base of the oval-mouth article (fig. 151) is completed, it is tied to a light rectangular framework by overcasting the projecting pairs of strands. On the longer sides this presents no difficulties, but on the shorter edges care is taken to leave, between each pair of strands, a single one, which, looped over the framework to the in-



BASKET WITH RECTANGULAR FLAT BASE; CLOSEWORK
"ARMADILLO" (WICKER) PATTERN; MULTIPLE WEFT; MADE
IN PEGALL STYLE, I. E., IN DUPLICATE. A RECEPTACLE
AND COVER



C



A



B

SINGLE HOURGLASS PATTERN BASKETS

A, Patamona; B, Makusi; C, Taurepang.

side, passes back in its own length, to be finally tucked under the penultimate transverse pairs (fig. 152). All the pairs projecting from below, around the periphery of the framework, are turned up now to help form the sides by passing a weft, one at a time, successively, over and under them, the extremities of each weft being tucked

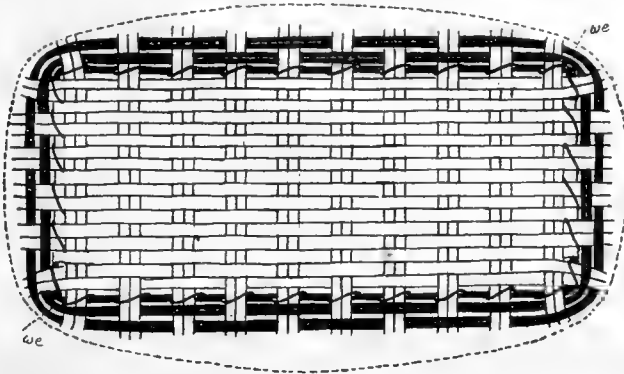


FIG. 151.—Diagram of single oval-mouth basket with mesh similar to that shown in plate 112. View of base from outside.

under one another. The height and shape of the walls, of course, depend upon the number, nature, length, etc., of the wefts introduced. Manufactured by Makusi and Wapishana.

432. With the rectangular-top article (pl. 112) there is no framework to which the foundation is attached, and it should be noted that, whereas the projecting strands on the longer sides of it are already in pairs, those on the shorter margins are obtained by taking them up in bundles of four (Arawak) and cutting short the first and third constituent of each (fig. 153 B), or in bundles of three (Patamona, Makusi) and tucking the middle strand between and under the other two (A).

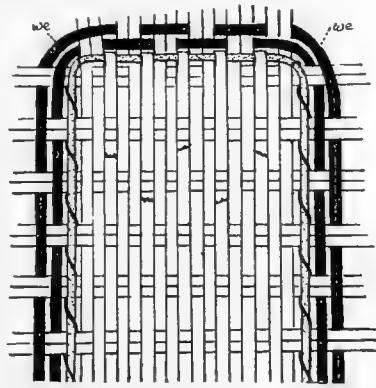


FIG. 152.—Base of preceding, viewed from inside.

433. Twilled (hourglass pattern) baskets (pegalls) have already been referred to (sec. 431). They are plaited in two similar halves, one slightly larger than the other, so that the former when inverted will act as cover for the latter. They thus together constitute something very much after the style of a lady's dress basket. The name, sometimes written "pack-all," is the Creole corruption of the Carib term pagara or pagala. Now, all pegalls other than those already mentioned as of the armadillo type (sec. 431) are commenced with the

hourglass pattern, to be immediately described, and continued on the twilled type (sec. 108). The proper way is for each half to be made of identical pattern, but sometimes the maker will have a lazy fit, and make the base of the lower complement wholly on the twilled type, somewhat after the style mentioned in section 447, a quick method sometimes adopted in the smaller articles made as toys for children or curios for tourists. It is interesting to note also that when the ordinary hourglass pegall is double-covered (sec. 115), the inner lining is often made after the armadillo style. All hourglass baskets, with but one exception (sec. 440), would seem to be made of itiriti. The hourglass plait is started with from six to eight strands (though I have seen as many as 16) arranged at their centers in such a way as to form two triangles (fig. 154 A, *a*), attached at their apices, to-

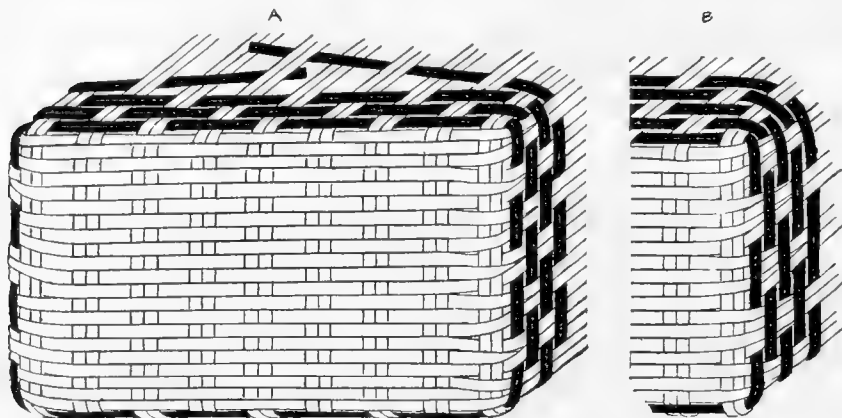


FIG. 153.—Diagram of pegall shown in plate 112. A, Patamona, Makusi; B, Arawak.

gether resembling a figure which may be legitimately likened to the old-time sand glass, whence I have named the pattern. This arrangement with uncolored strands is shown in the sketch (fig. 154 B), but where one series of the strands is colored black (or red) but half its length (A), the resulting pattern shows colored (C, E) or plain (D) hourglasses, with plain or colored backgrounds, respectively. On the other hand, certain series may be so stained that the result depicted is F, a pattern of coloration specially practiced on occasion by Warrau.

434. In a unique specimen met with among the otherwise orthodox Patamona pegalls I came across a multiple hourglass pattern example peculiar in that on the upper constituent (fig. 155 A) the central hourglass is plaited in the usual fashion, but the half of each lateral one is merged into what should constitute the intervening vertical bar; on the lower, as usual unstained (B), the intervening

bar is still further modified. Whether this arrangement should be included under the category of freaks (sec. 447), it is now impossible for me to say. At the time of purchase the peculiarity in design seems to have escaped my notice.

435. It is to be observed that upon the number of the hourglasses will depend the length, as compared with the breadth, of the finished article. With a single pattern, the base will be a square (fig. 156 A); with a multiple one (B, C, D) it will be more or less oblong. When

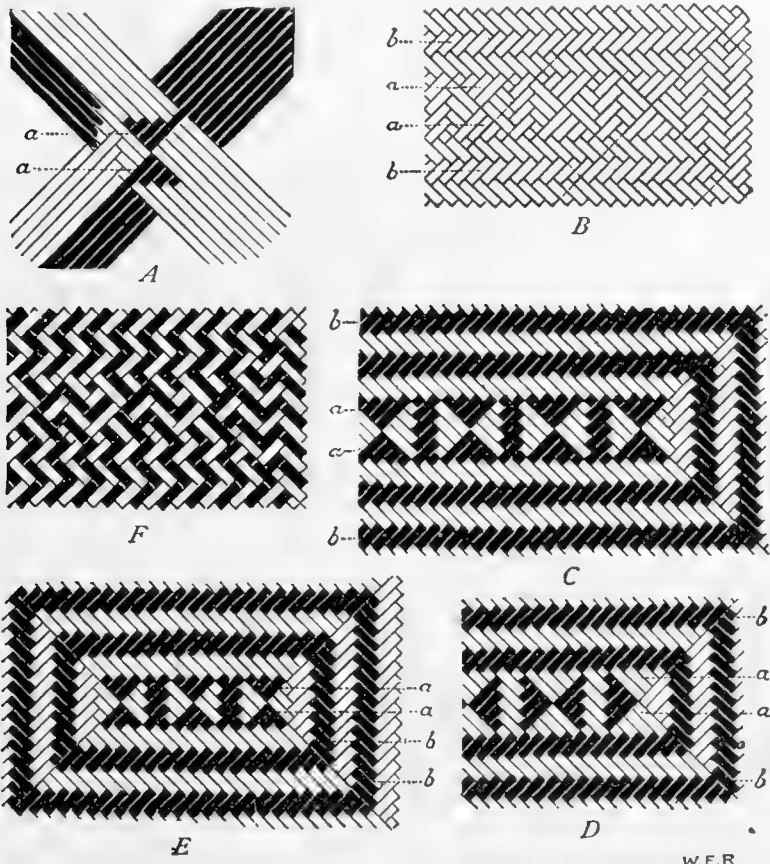


FIG. 154.—Twilled hourglass pattern pegalls. Apparent variations of pattern due to coloration of the strands. *a, a*, Hourglasses; *b, b*, concentric rectangular frames.

once these figures are completed, the free ends of the projecting strands are plaited throughout in the ordinary way of one under and over three others (twilled pattern), so as to form the foundation, exhibiting a pattern of concentric rectangular frames (fig. 156, *bb*)—the well-known “herringbone” (twill) type of technologists—which in the larger pegalls may be broken up and subdivided (B, C, D). The base completed, a start is made with any one of its corners (figs. 156 A and 157 A), where the projecting

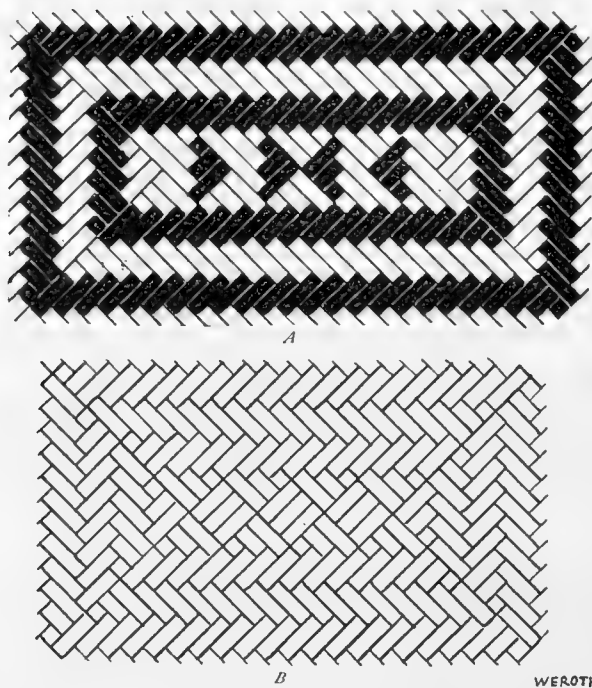


FIG. 155.—Unusual form of hourglass pattern, showing upper (A) and lower (B) constituents. Patamona.

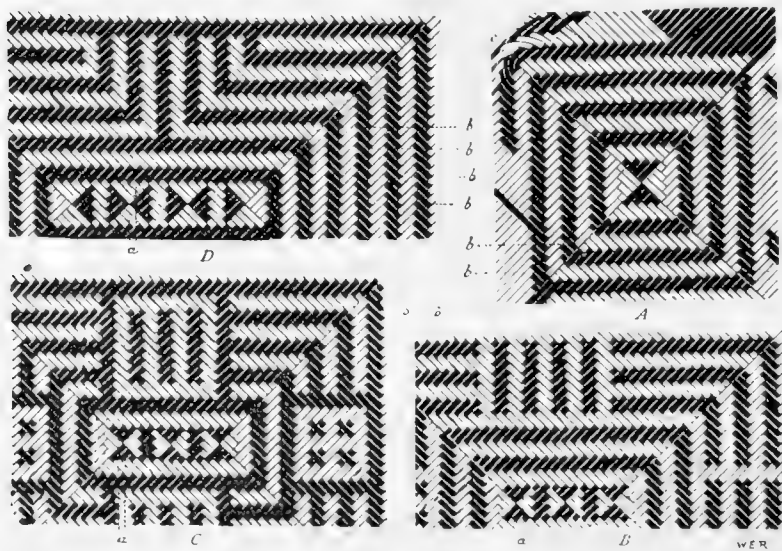


FIG. 156.—Twilled hourglass pattern baskets. A, Single pattern and square base; B, C, D, multiple pattern and oblong base.

strands of the two contiguous edges are folded sharply over and plaited again in the twilled style, one under and over three, so as to lock one another and to build up the sides, which invariably commence with two or more rows of such herringbone frames. These frames (*b*) are easily distinguishable in figure 167, which represents all the Pomeroon district patterns employed on the sides of the pegalls where uncolored strands are always used (WER, v).

436. I have collected an exceptional and unique example, where, on completion of the foundation, the start for the building up of the sides has been commenced, not at one of its corners (fig. 157 A), but at the center of one of the sides of the rectangular base (fig. 157 B). Needless to say, the overlapping of the first row of strands

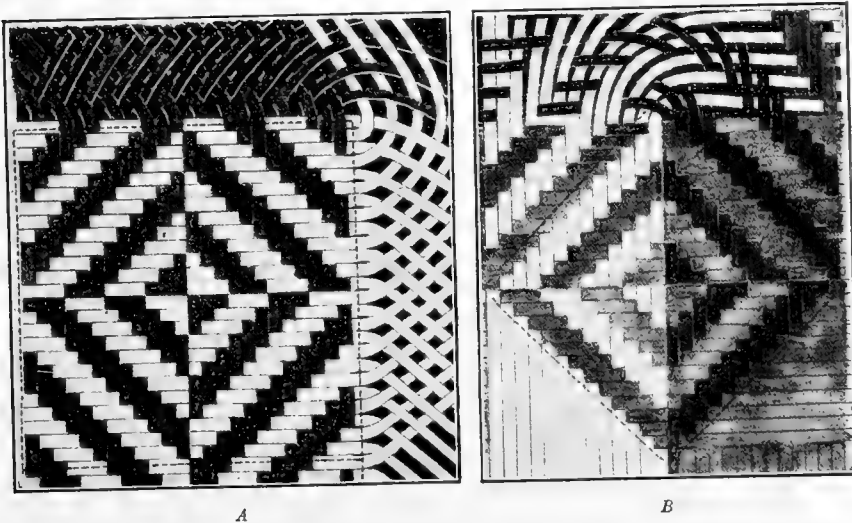


FIG. 157.—Hourglass pattern baskets. A, The proper way to build the sides; B, a freak.

is not neat, and the interspaces are very evident. It is very probably a freak (sec. 447).

Once the corners have been turned little difficulty is experienced in the plaiting of the sides according to the pattern desired (sec. 443). In order to trim the free edges of the sides when completed, the two layers of strands (*ab*) are tucked plaitwise, respectively, outward and inward upon themselves (fig. 158 A, B) and the projecting ends cut (*c*). The double edging thus produced is finally covered with two or three (*C*) split-cane slips and sewn into position much in the same way that the edges of the square trays were shown to be protected, but naturally with more delicate workmanship. To render the pegall rain-proof one or both moieties may be made in double, with various leaves (sec. 115) carefully arranged in between.

437. But to return: Where one hourglass only is plaited, the resulting foundation, to be symmetrical, must be a square, and the completed basket derived from it more or less round (i.e., no sharp angles, pl. 113 A), giving rise not only to variations of pattern but also of

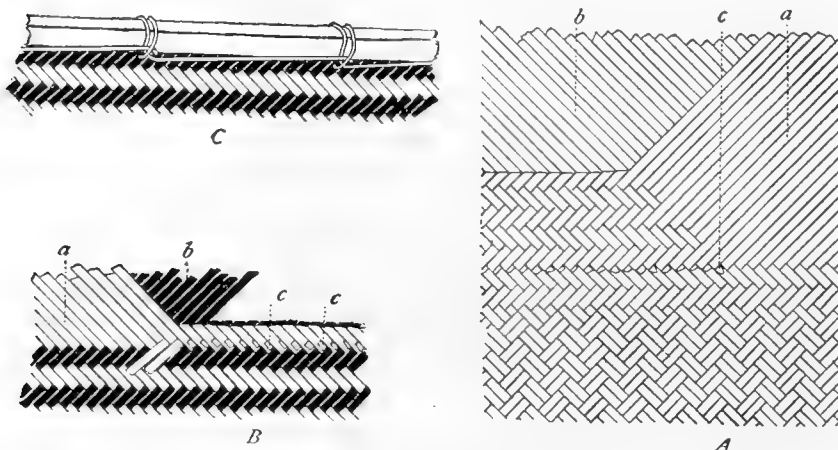


FIG. 158.—Hourglass pattern (twilled) baskets, pegalls, etc. Method of trimming up the edges when completed.

technique. Indeed, so profound may some of these variations become that we are afforded an opportunity of classifying all hourglass pattern basketry into two main divisions, according as the foundation or base is single figured or multiple (more than one). The simplest forms of

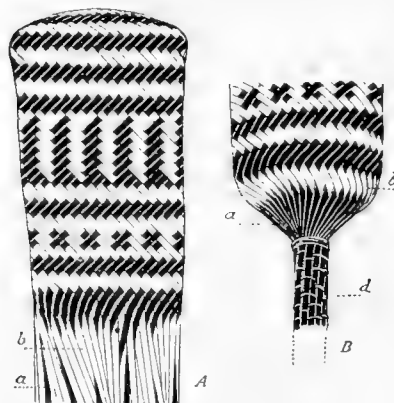
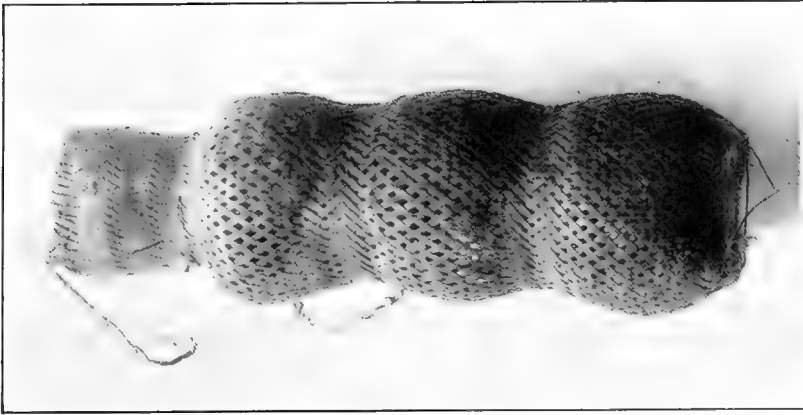
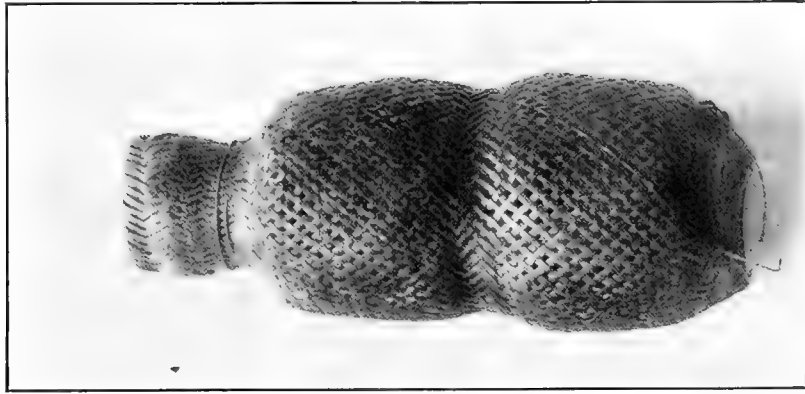
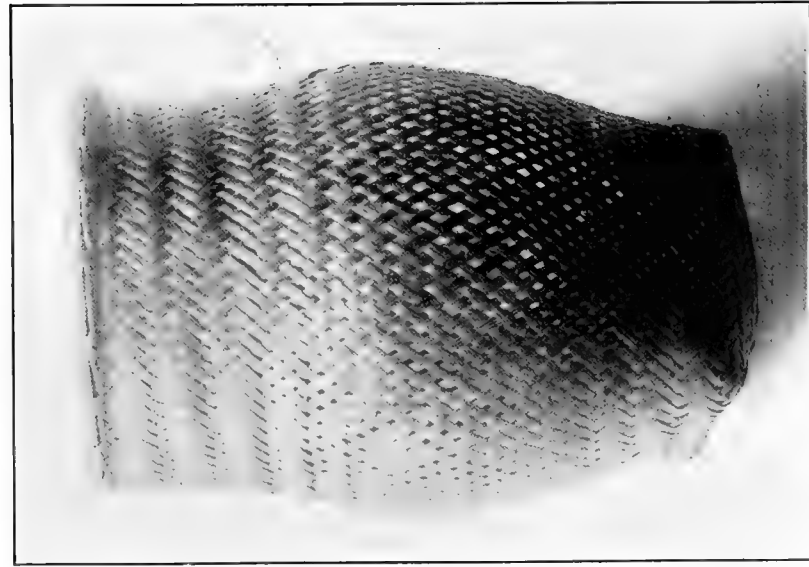


FIG. 159.—The Arawak baby-rattle.

baskets belonging to the single hourglass pattern series will be the cylindrical pegalls of the Akawai, the only examples of single hourglass baskets made in duplicate, to act as a sort of pegall. Other examples belonging to the group are various baskets with everted brims of the Taurepang (pl. 113 C), and certain ones with markedly narrowed brims from the Makusi (pl. 113 B). These latter are made by men, but used by women for beads and small knickknacks, and are carried

hanging on to the top corner of the shoulder basket. They are called kau-aba. All made from itiriti. Of identical construction with this single hourglass pattern of basket is the itiriti baby rattle of the Moruca River Arawak (sec. 620). Here, however, upon completion of the sides, instead of tucking the strand ends under themselves and

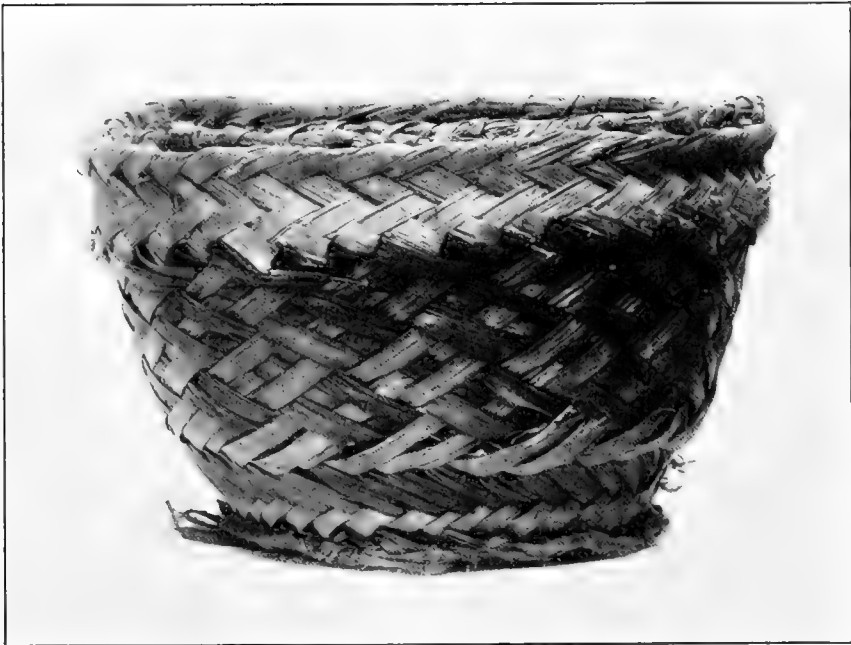


SINGLE HOURGLASS PATTERN BELLY BASKETS

(For diagrams see fig. 160.)



.1

*B*

SINGLE HOURGLASS PATTERN COMPOUND BOWL OR BASIN BASKETS. NOTE THE SUPPORTING LEDGE AROUND THE BASE. IN ADDITION TO THIS LEDGE THERE IS, IN B, AN INWARD PROJECTING LEDGE AROUND THE UPPER MARGIN OF THE ARTICLE

(For diagrams, see figs. 161-165.)

cutting, etc. (fig. 159 A), they are tightly twisted and tied into a composite bundle to constitute the handle (B). Of course, previous to the twisting and tying, certain seeds, shells, etc., are inserted.

438. The next category would include the large tublike baskets for storing the cassava cakes, known to the Arawak as habba. Here the foundation may be from 15 to 18 inches across, the increase in size being obtained by plaiting an increased number of rectangular "herringbone" frames (sec. 435) around the central hourglass. On completion of all the plaitwork and protection of the free edges with split cane, etc., the whole is supported on four legs, to each of which it is tied below at one of the corners, and above to the free edging now strengthened with cane (sec. 436). The basket is made of itiriti (pl. 132 C).

439. A third distinct group comprises the curious belly baskets (pl. 114) of the Arekuna, Patamona, and others who use them for holding peppers. The first specimens I came across were certain single-belly ones from the Pomeroon River Arawak, or rather

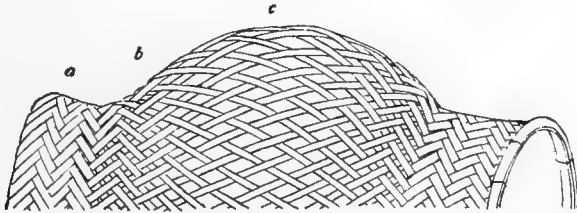


FIG. 160.—Diagram of a single-belly basket shown in plate 114.

limited to one of its creeks, the Wakapoa, but there is reason to believe that they are not indigenous to the district. Such articles differ in technique from all other baskets of the series in that no pattern is, or rather can be, worked into the sides. In a single-belly specimen (fig. 160), the whole of the latter is plaited first of all in the common twilled fashion of one strand over and under three (*a*), and then with one strand over and under two (*b*), so as to get the "bulge," the maximum of which is obtained by plaiting one-over-and-under-one (*c*). To lessen the bulge, the processes are, respectively, reversed, and thus the normal size once more reached. The Arekuna and Patamona specimens may be plaited into as many as three bellies. Made by men from itiriti.

440. The last and most difficult of the single hourglass series to explain and describe are the compound basin or bowl shaped baskets (pl. 115) made from the "pimpler" (akkoyúro) palm by Wapishana and Makusi. They are the only kind of hourglass pattern basketry not made of itiriti. Plaited like the preceding on a square foundation, i. e., a single central hourglass, it differs from

them in the addition of extra strands during the course of manufacture, the object of such extras being threefold: To form a ledge around the base for stability, to help increase the thickness of the lower portions of the walls for strength, and to amplify the area of the upper portions of the walls for shape. On occasion yet another

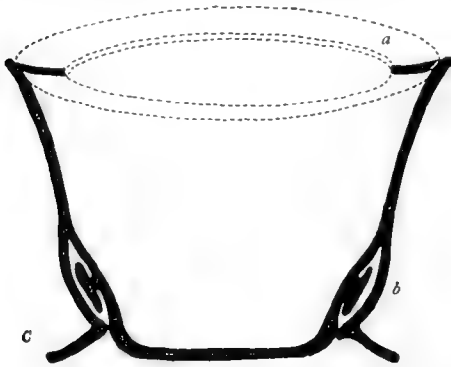


FIG. 161.—Section of a single hourglass pattern compound bowl or basin basket, showing the inverted brim (*a*), the thickening (*b*) of the lower walls formed by the extra strands and edging, and the supporting ledge, (*c*). (See pl. 115 B.)

purpose may be served, i. e., when the free extremities of the extra strands form a horizontal ledge within the brim for preventing any of the contained articles, usually cotton, falling out, except when tilted over to an extreme degree (fig. 161). Putting the matter as best I can, the manufacture of such a basket can perhaps be detailed as follows: Upon completion of the foundation, and the raising of the walls to the level of the first

three or four rows of herringbones (fig. 162), the outer layer of projecting strands is "broken"—i. e., turned down—and its ends plaited into a flat bordering, the remaining free extremities being then cut short (fig. 163). Extra, and usually colored, strands are now passed

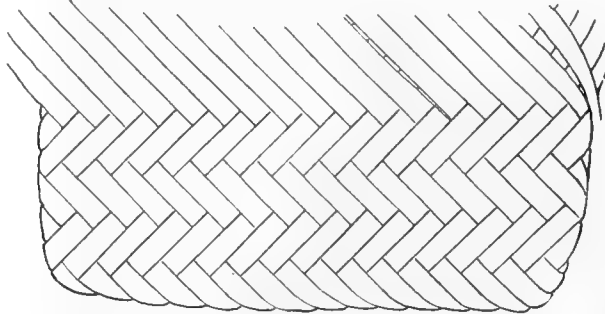


FIG. 162.—Compound bowl or basin basket. First stage in the making of the sides.

from below up (fig. 164), under the first row of herringbones, then over the flat border, and so come to be plaited with the inner layer of projecting strands, and thus form with it the particular pattern desired (fig. 165). It will be now recognized how the thickening of the lower portions of the basket walls depends upon the two layers of original wall, the edging formed by the outer wall, and the super-

imposed extra strands. The lower ends of these extra ones are finally broken or turned up, plaited into one another to form the supporting ledge, and their free extremities finally cut.

441. Multiple hourglass pattern pegalls (pls. 116; 117 B) are made on the lines already indicated in section 433 and show great varieties both in size and in pattern (sec. 443).

442. The larger satchels (pl. 117 A; fig. 166 A) formerly met with among the Pomeroun Arawak, and evidently, in earlier days, among certain Indians of Cayenne (pl. 117 C) must be regarded as very much flattened multiple hourglass pegalls, the mode of construction and pattern being identical, the difference lying only in the shape.

But there is certainly what I should call a degenerate form of comparatively small satchel (fig. 166 B), shaped very like the old fashioned leather cigar case, where, owing to the limited width of plait, the hourglass is only traceable (C) or is replaced altogether by

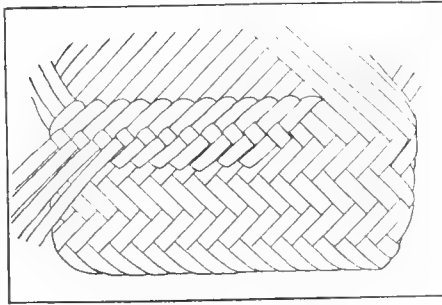


FIG. 163.—Compound bowl or basin basket. Second stage in the making.

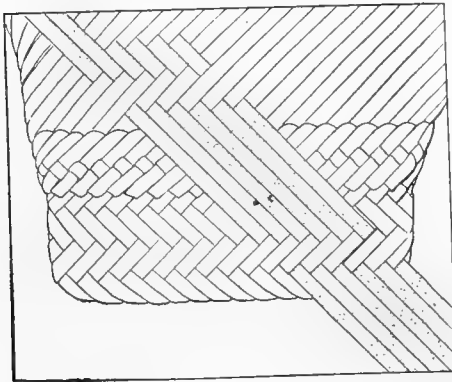


FIG. 164.—Compound bowl or basin basket. Third stage in the making.

(what was originally adjacent) the herringbone (D). It is sometimes to be seen on the Pomeroun, but is apparently made more as a toy for tourist or retail purposes.

443. Names are not usually applied to the patterns on the uncolored hourglass pegalls, although certain of them are identical in construction with those met with in the stained specimens and in the cassava squeezers (fig. 167). On the other hand, with the use of color, while the cover tops of the pegalls are all more or less

identical (figs. 154–156), the artificer will exercise skill and ingenuity in depicting various patterns upon the sides, adding as often as not certain decorative borders (fig. 169, *k*) above and below. These patterns, my informants tell me, are handed down from father to son, and it is certainly remarkable that, in the absence of any working model, these Indians will execute so many and such varied designs

with so much accuracy. One old Warrau friend of mine can plait more than a score of different patterns.

444. The following objects are to be found illustrated on the side panels of these stained hourglass pattern pegalls, baskets, satchels, etc.

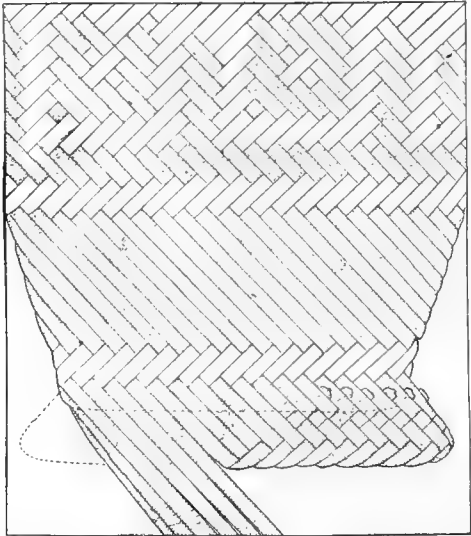


FIG. 165.—Compound bowl or basin basket. Fourth stage in the making.

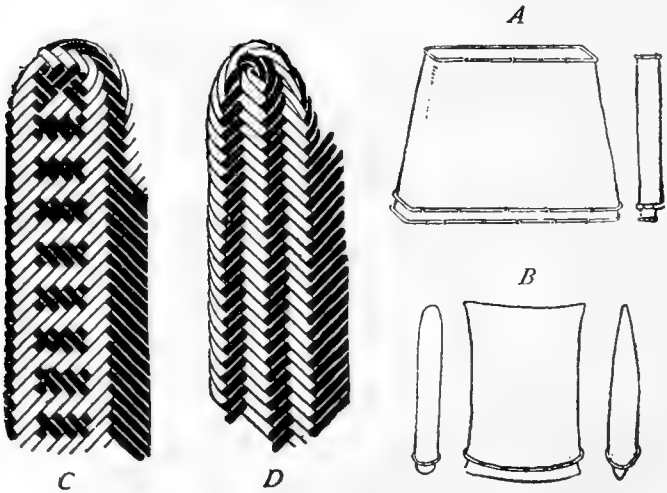


FIG. 166.—Satchels of the Pomeroon River Arawak.

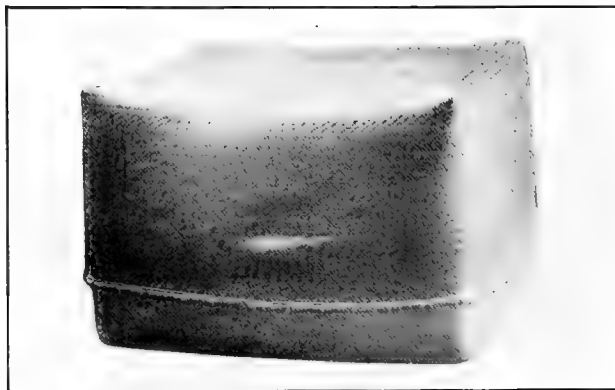
(secs. 433–442), met with among Arawak, Warrau, and Carib stocks: Taking plants, there is the wild nutmeg (*Myristica* sp.), the darli tree of the Arawak and Warrau (fig. 168), indicated by its main (*a*) and secondary (*b*) branches, which certainly possesses a characteristic appearance in between the other forest trees. This, coupled with the



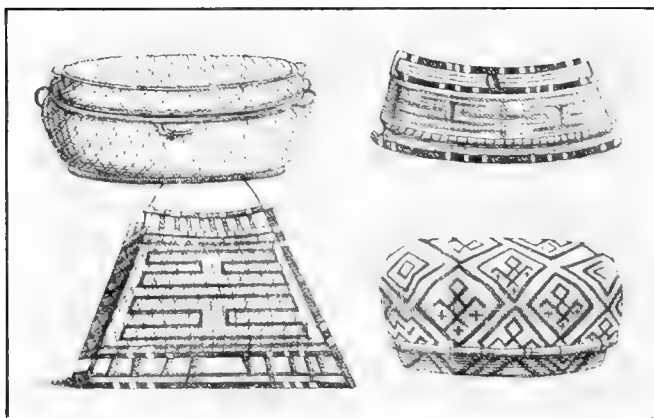
MULTIPLE HOURGLASS PATTERN PEGALL. OPEN



1, Satchel. Arawak. (Georgetown Museum.)



B, Multiple hourglass pattern pegall. Closed.
(Georgetown Museum.)



C, Baskets from Cayenne. Middle eighteenth century. (After Barrère.)

PEGALL, SACHEL, AND BASKETS

facts that its fruit is edible and its sap utilized as a mouth wash and as a cure for "yaws," may perhaps account for the frequency of the pattern. Charles Dance (Da, 304-305) gives the same interpretation

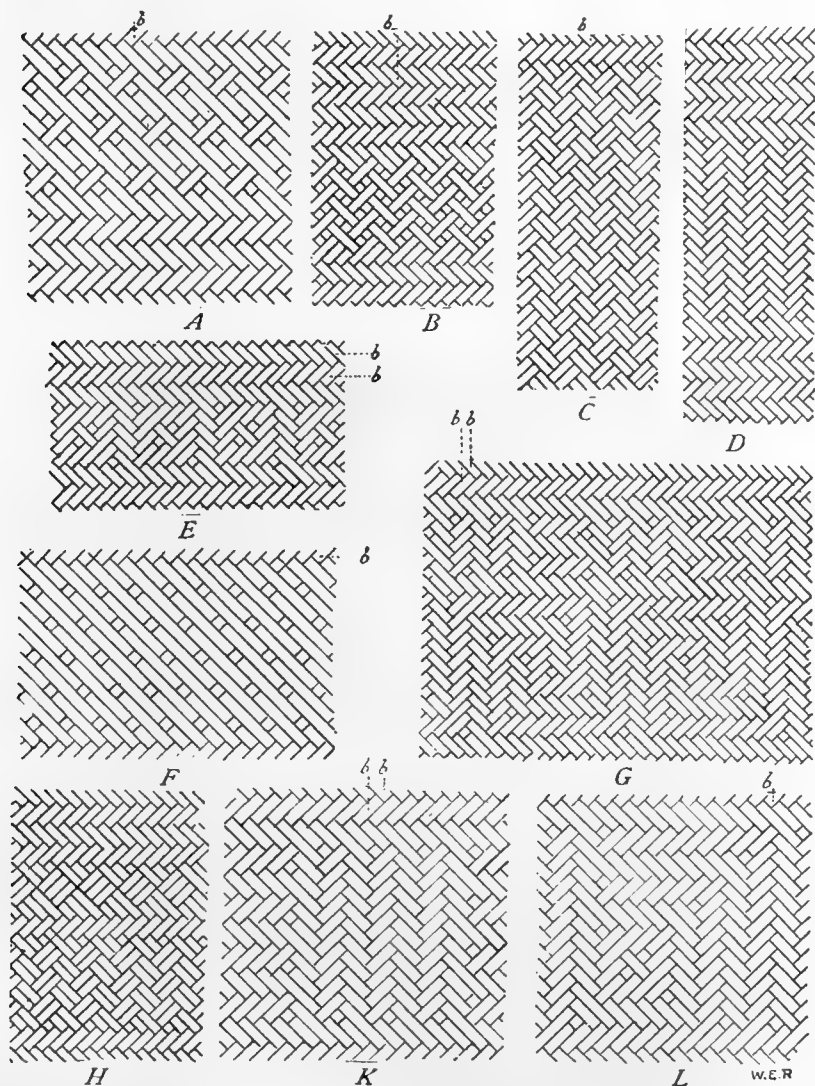


FIG. 167.—Hourglass pegall side-panel (uncolored) patterns.

to a very similar figure. On the other hand, certain of the Carib recognize in this pattern the famous mythical snake which originally supplied them with their vegetable charms (WER, vi, sec. 235). Another plant represented on these pegalls is blade or savanna grass waving in the wind (fig. 169 A).

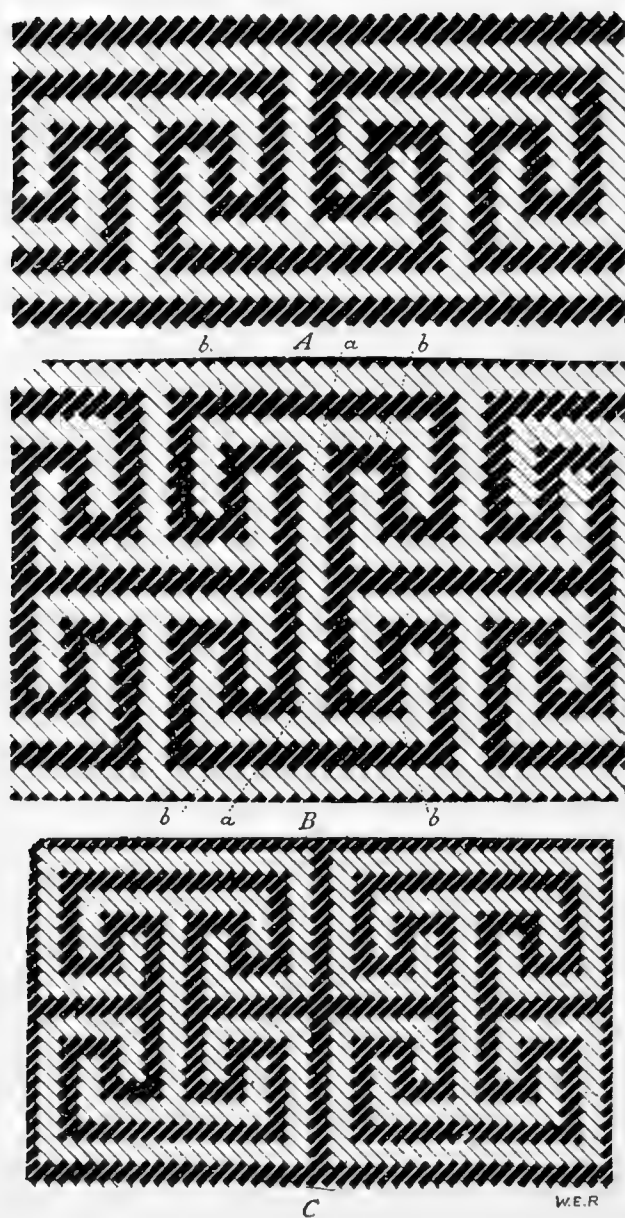


FIG. 168.—Hourglass pegall side-panel patterns. The wild nutmeg, indicated by its main (*a*) and secondary (*b*) branches.

445. Then we find a centipede (fig. 169 B), butterflies (G), and a certain edible periwinkle, shown by its sinuous tracks on the mud

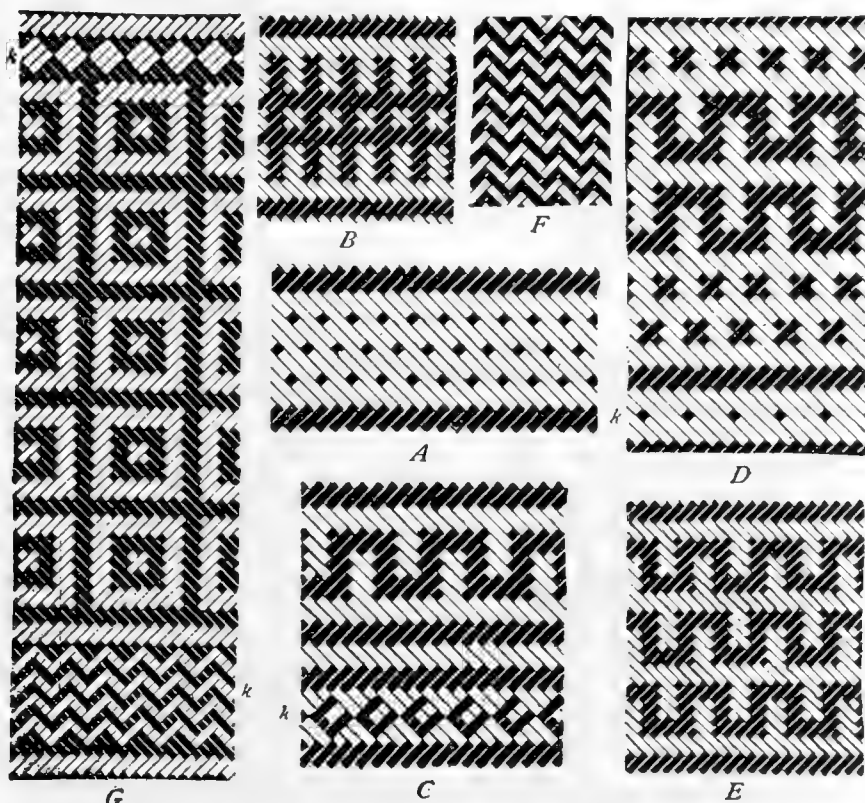


FIG. 169.—Hourglass pegall side-panel patterns. A, Savanna grass; B, centipedes; C–F, periwinkles; G, butterflies.

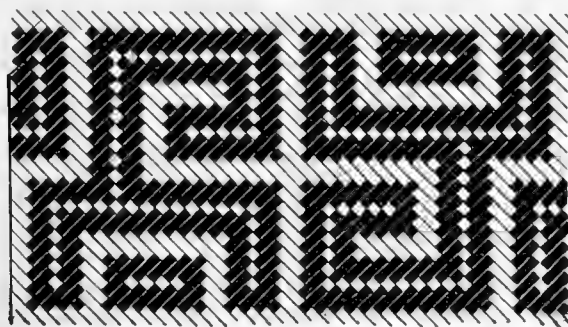


FIG. 170.—Hourglass pegall side-panel pattern. The scorpion.

flats in single (C), double (D), treble (E), or multiple (F) rows. Next comes a scorpion (fig. 170), a water beetle (fig. 171 A), and the edible *Calandra* grub (B). The morokot, one of the most esteemed

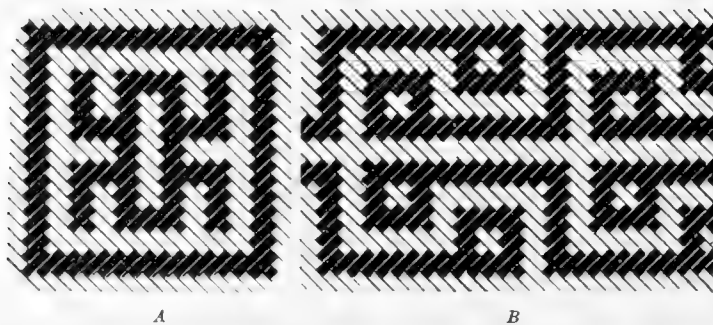


FIG. 171.—Hourglass pegall side-panel patterns. *A*, Beetle; *B*, edible grub.

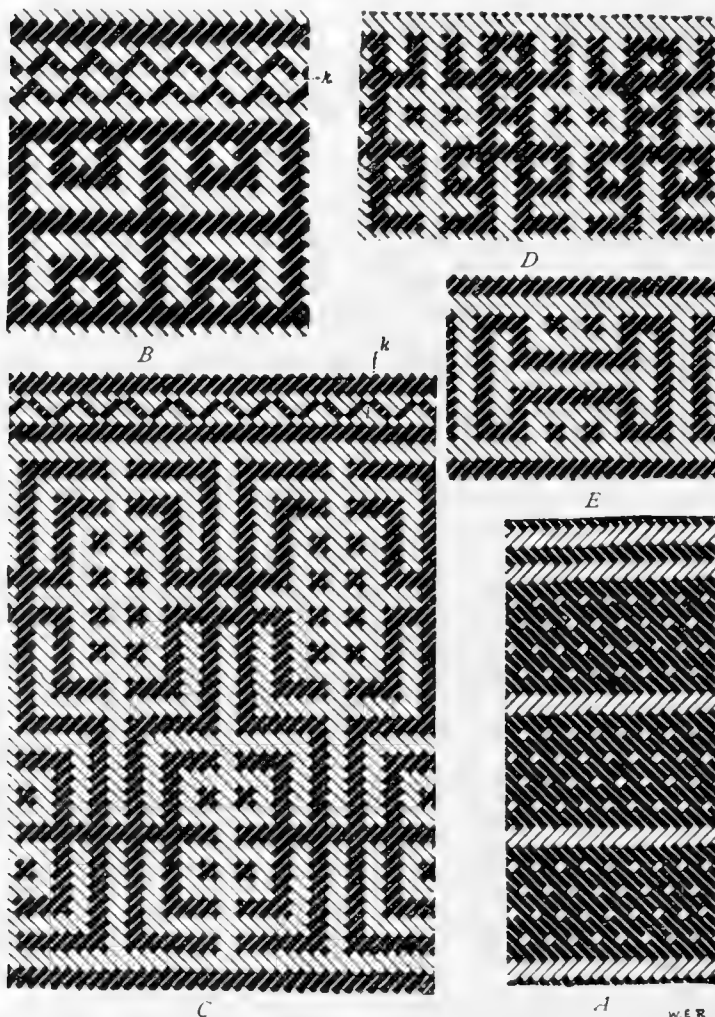


FIG. 172.—Hourglass pegall side-panel patterns. *A*, Morokot fish; *B*, *C*, tortoise shell; *D*, *E*, frog; *K*, decorative border.

of their fish, is pictured with its spotted body (fig. 172 A). Reptiles are also found space for—turtles, frogs, and snakes. Tortoise shell in B, C. The frog is shown in D, and again in figure 173 D, a form which degenerates into the dumb-bell shaped figure illustrated in figure 172 E. De Goeje (GO, 6) records a similar pattern from

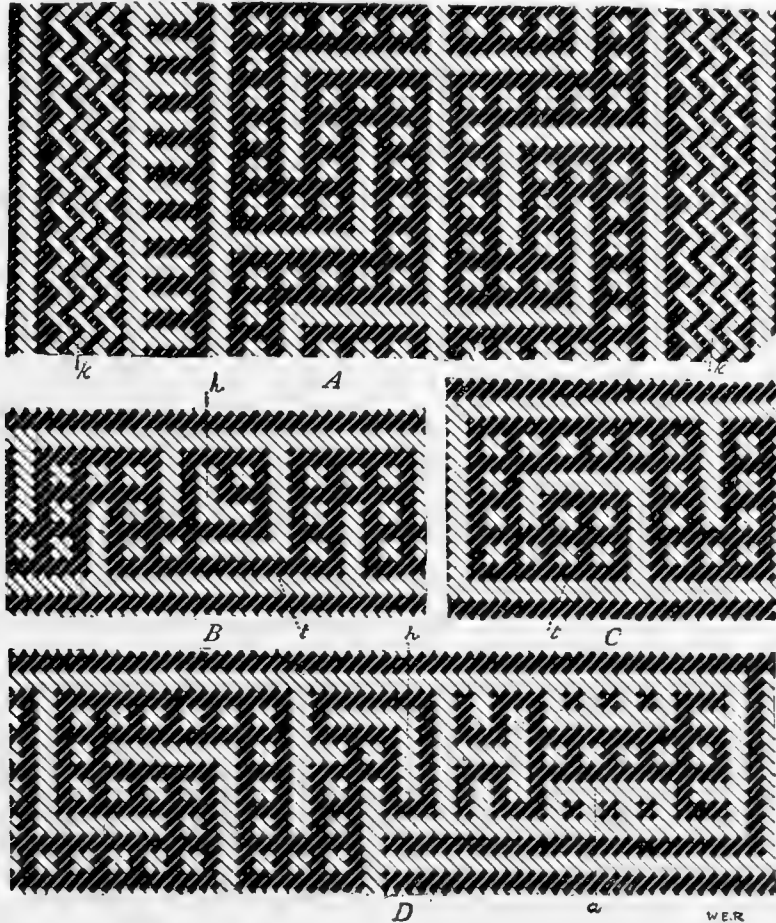


FIG. 173.—Hourglass pegall side-panel patterns. Snake: Showing body alone (A), head and tail (B, C, h, t), swallowing a frog (D).

the sister colony of Surinam. Snakes are represented in these designs by at least three different methods: By a more or less accurate figure of the body generally, as in the case of the bush-master shown in figure 173 without (A), or with (B, C, D), the head (*h*) and tail (*t*); by a pictogram indicating the sinuous nature of the creature's movements (fig. 174 A, B), or its concentric arrangement when coiled at rest (C); and by an imitation of the body-surface markings, as in

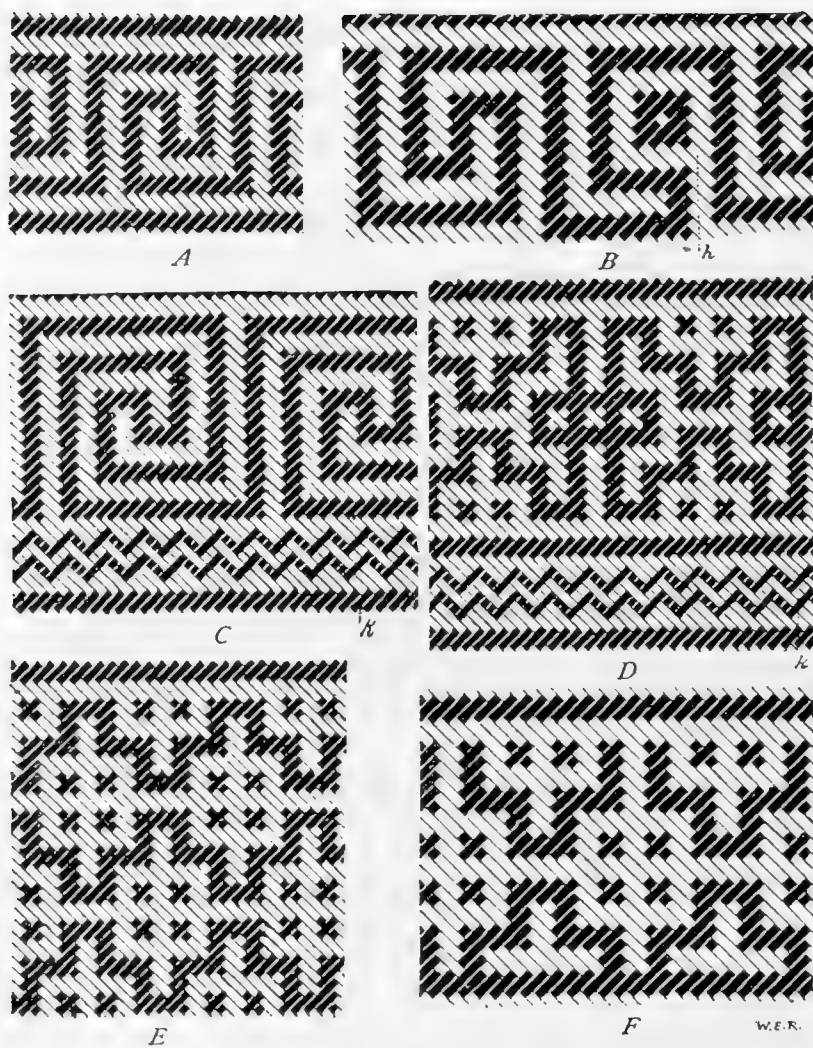


FIG. 174.—Hourglass pegall side-panel patterns. Snake: Its sinuous motion (A, B); when coiled at rest (C); its body-markings (D, E, F).

the case of the land camudi or boa constrictor shown in D, E, F and figure 175 A. Figures 173 C and D, illustrating portions of the same pegall, represent a snake about to swallow a frog; a similar combination is given by Dance and others (PEN, I, 126).

Birds are indicated as flying (fig. 175 B) with wings (*w*) outstretched from a body equal in size to the head (*h*). Dance describes the pattern as macaws or parrots flying, while De Goeje, in Surinam, interprets it as "swallows, bats, or dancers." According to Pierre Barrère (PBA, 138), an identical pattern was met among the Galibi of Cayenne (pl. 117 C). Birds are also represented by their three-claw tracks (fig. 175 C). The many species of jaguar or "tiger" (fig.

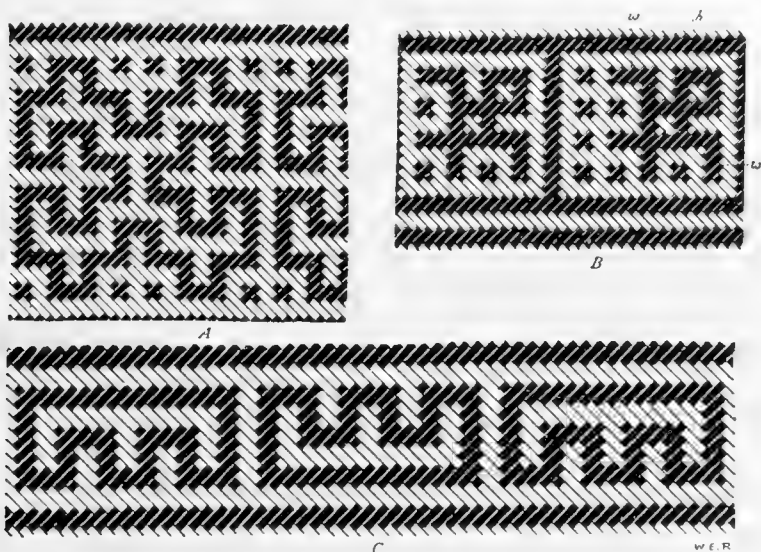


FIG. 175.—Hourglass pegall side-panel patterns. A, Markings on body of camudi snake; B, birds in flight; C, their three-claw tracks.

176) are illustrated in characteristic fashion by the "spots" (*s*) indicated with varying degrees of complexity (B, C, D), or by the stripes (A). Certain of the designs (E, F) show phases in the decorative devolution from the original motif (D). The same thing can be noted with figure 177 A, derived from figure 176 A. The kibihi is pictured in a series of spotted bands (fig. 177 B) intended for its tail, while monkeys (C, D) and deer (E) are illustrated in their entirety. A similar design for deer is figured by De Goeje from Surinam. In none of these Pomeroon district designs has a representation of the human form been observed; indeed, no record of it has been obtainable throughout the Demerara. On the other hand, W. Joest (WJ) gives a Surinam example of an erect human figure

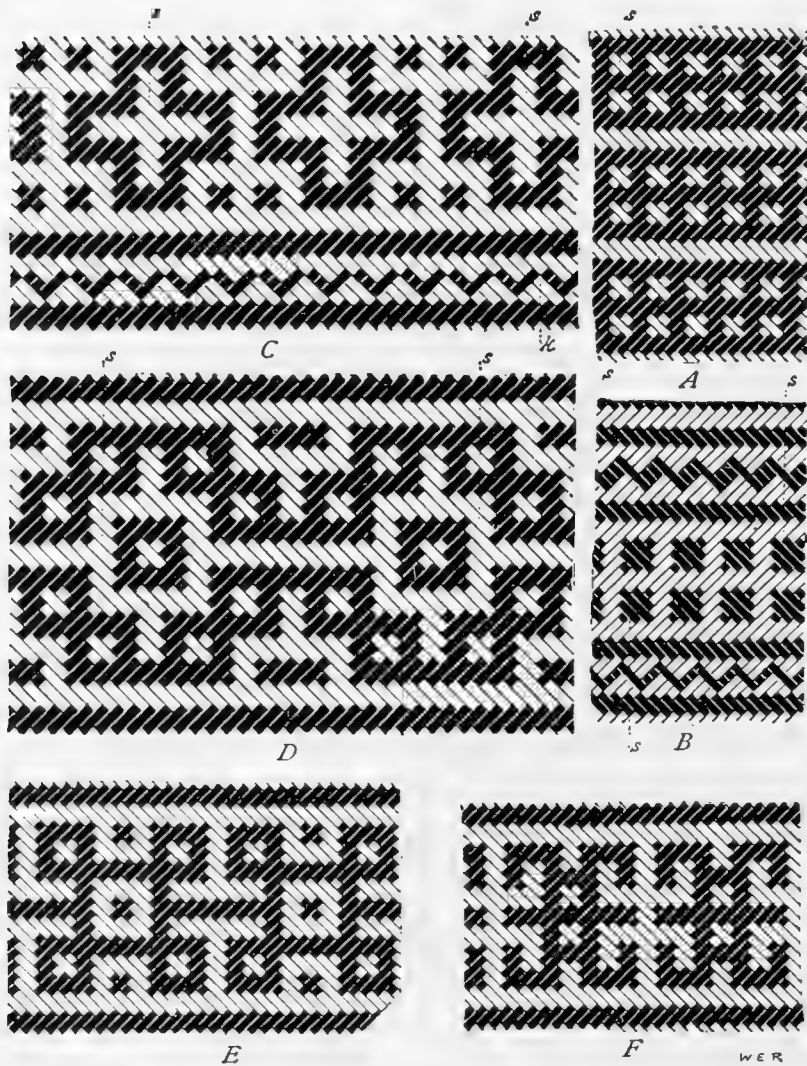


FIG. 176.—Hourglass pegall side-panel patterns. Jaguar, represented by its body markings, as spotted stripes (A) or spots (B, C, D).

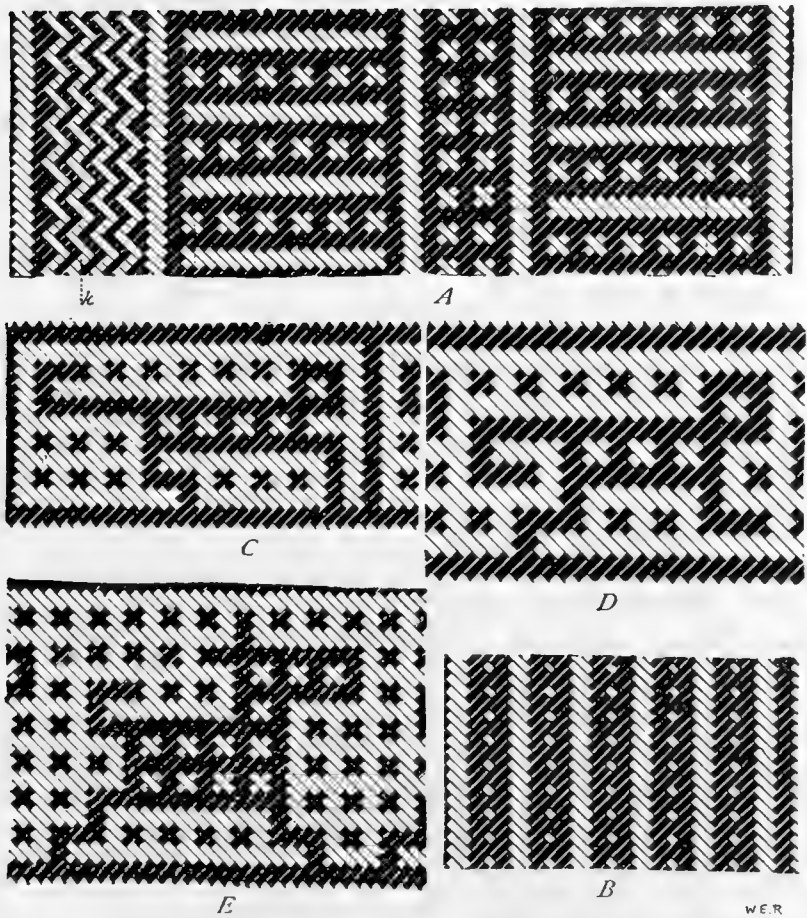


FIG. 177.—Hourglass pegall side-panel patterns. Jaguar, represented by its body stripes (A) ; kibihi, by its tail (B) ; monkey (C, D) ; deer (E).

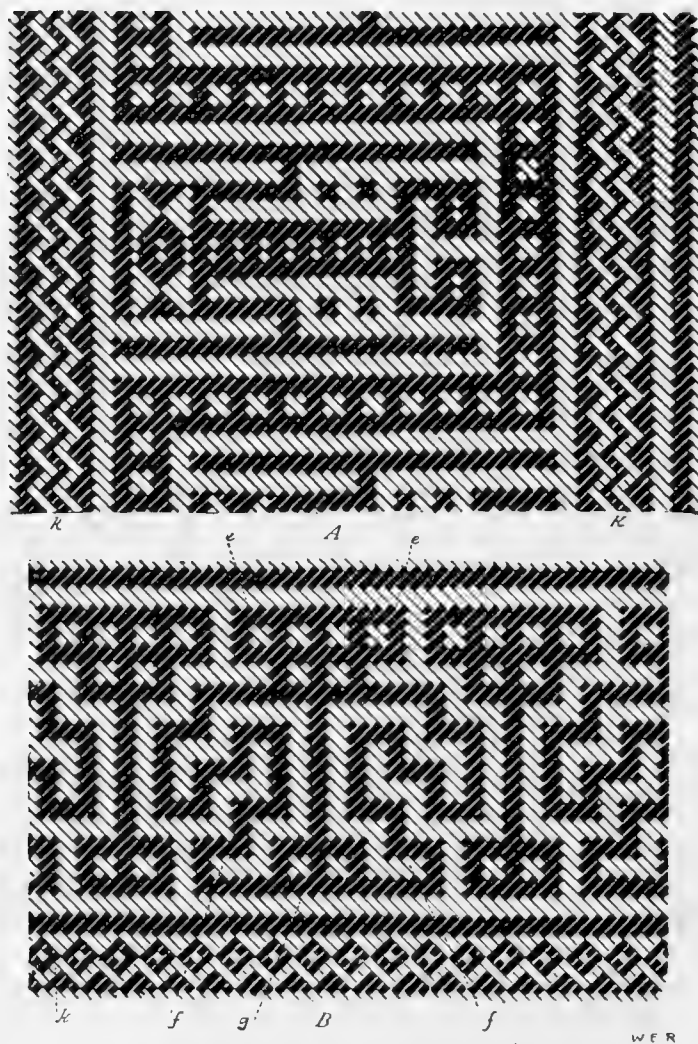
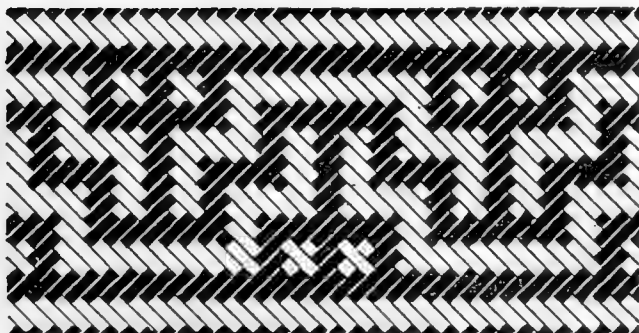
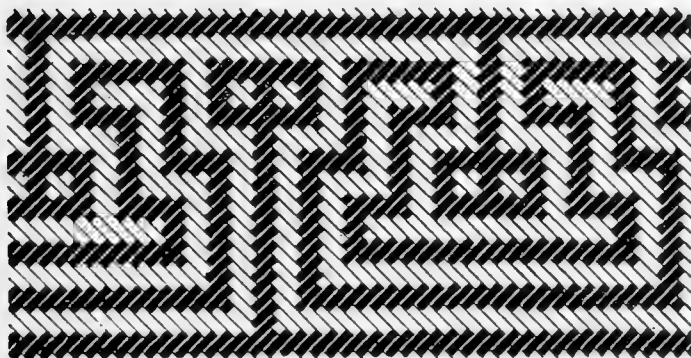
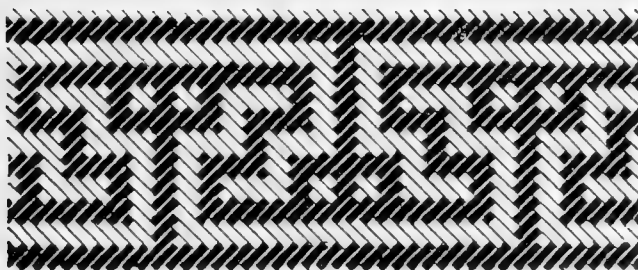


FIG. 178.—Hourglass pegall side-panel patterns. *A*, Man; *B*, dog.

*A**B**C*

W.E.R

FIG. 179.—Hourglass pegall side-panel patterns. Dog. This and the two following figures have as their motif the limbs and genitalia as shown in preceding figure.

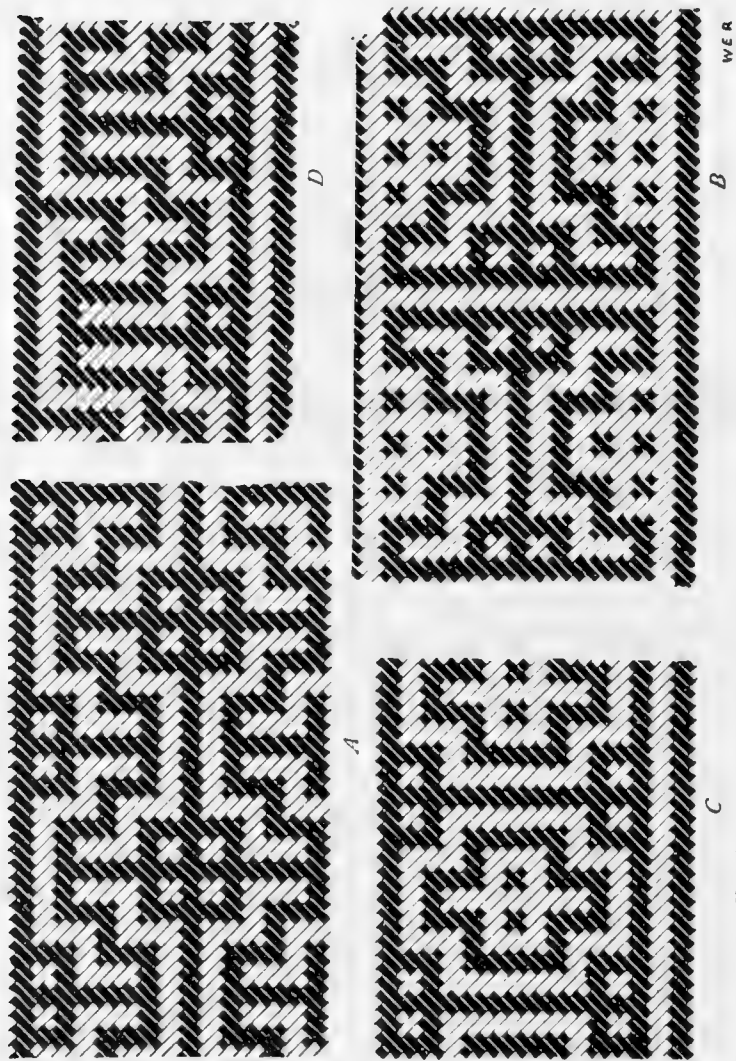
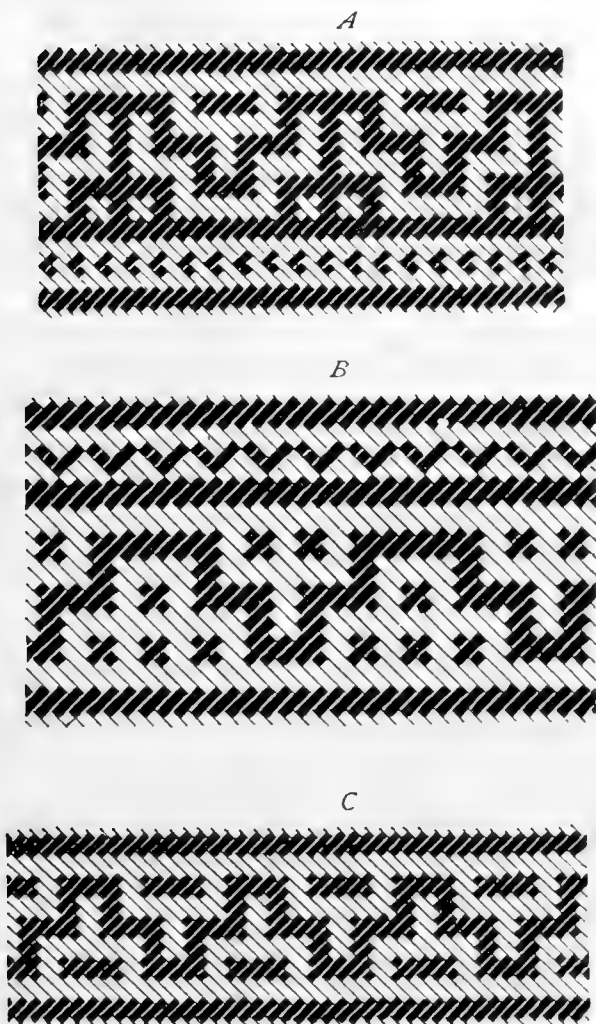


FIG. 180.—Hourglass pegall side-panel patterns. Dog. See preceding figure.



W E R

FIG. 181.—Hourglass pegall side-panel patterns. Dog. See previous figures.

which I have adapted (fig. 178 A) for comparison with the following series illustrative of the dog. The motif of the dog (fig. 178 B) forms a very interesting study as constituting the basis of many of the designs. The entire animal, with raised ears (*e*), is viewed from the front. It is standing on its hind legs (*f*) with all limbs extended outward and the male genitalia (*g*) fully exposed. The remaining 10 illustrations (figs. 179, 180, 181) all indicate the hind legs *cum annexis*, the artistic representation of which shows a marked de-

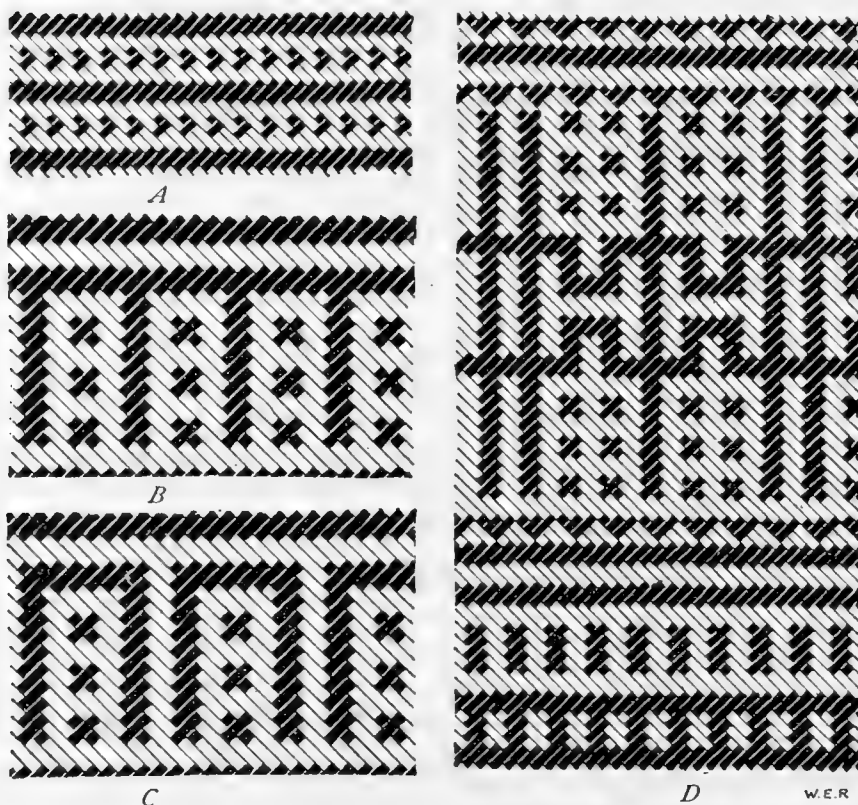


FIG. 182.—Hourglass pegall side-panel patterns. Meaning unknown, even to their makers.

velopment in figure 179 A, B, as compared with its degeneracy in figure 181 B, C. Dance gives a picture practically identical with figure 179 A, as the "Spirit of the sheep," an explanation which, in view of the physically characteristic attributes of the male animal, easily becomes intelligible.

446. The meanings of a few of the patterns (fig. 182) have been lost, even to the makers themselves. They were taught them by their fathers, but they have forgotten what they were supposed to represent.

447. Freak pegalls.—In dealing with hourglass (twilled) baskets (sec. 433) it was stated that “all pegalls other than those already mentioned as of the ‘armadillo’ type are commenced with the hour-

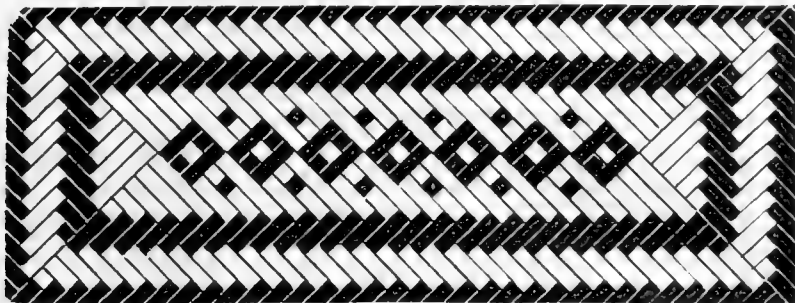


FIG. 183.—The cover of a “freak” pegall.

glass pattern and continued on the twilled type, etc.” Occasionally, however, some sophisticated Indian will spontaneously construct a

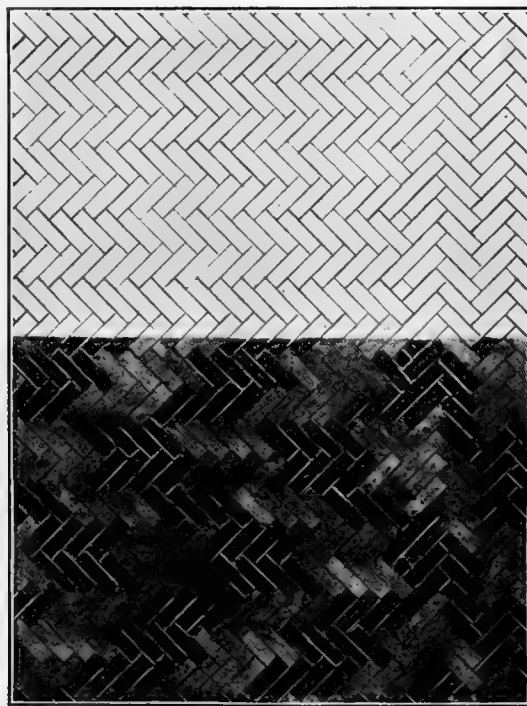


FIG. 184.—Half the cover of a “freak” pegall. One quarter shows how the pattern is hidden by the coloration of the strands.

freak, which, getting into circulation, may give the ethnologist a good deal of trouble. Other Indians will speak of it as “fancy” work, and admit that they could easily make one like the pattern

under consideration, but have never done so, because it was not the "proper kind." Of the two specimens that have passed through my hands, both were manufactured by old Arawak, one of them long in contact with the Europeans and a reputed miser, the other a visitor to the Chicago World's Exposition. In the one pegall (fig. 183) the central row of hourglasses on the cover has been replaced by a pattern very similar to that on the decorative border in figure 178 B. In the other (fig. 184) there has been an entire replacement with a row of herringbones, a twilled pattern, the coloration of the strands (which represent the markings on a local snake) helping in veiling the plaitwork. The technique of this twilled pattern is the lazy-man's or toy style mentioned in section 433.

448. The tentative classification under which I have grouped the baskets plaited with specially prepared strands may now be conveniently tabulated thus:

Hexagon.....	Single, i. e., spiral.....	Secs. 412, 413.
	Multiple.....	Sec. 414.
	Radiate foundation.....	Sec. 415.
	Vertebrate foundation.....	Sec. 417.
Circle or oval.....	Hexagon type.....	Sec. 418.
	Loop type.....	Sec. 419, 420.
	Unenclosed foundation.....	Sec. 421.
Cone.....	Openwork.....	Sec. 422.
	Closework.....	Sec. 423.
	Hipped.....	Sec. 424.
	Cabled.....	Sec. 425.
	Flattened.....	Sec. 426.
	Openwork.....	Sec. 427.
	Closework.....	Sec. 428.
	Hexagonal.....	Sec. 429.
	Quadrilateral.....	Sec. 430.
	Checker.....	Sec. 431.
	Wicker ("armadillo").....	Sec. 432.
	Twisted (hourglass), sec- tions 433-436.....	Sec. 437.
	Single central figure: com- pleted article is either like a— Multiple figure.....	Sec. 438.
	Without cover.....	Sec. 439.
	With cover.....	Sec. 440.
	Cylinder.....	Sec. 441, 442-443.
	Tub.....	Sec. 442.
	Belly.....	Sec. 443.
	Basin, bowl.....	Sec. 444.
	Remaining pegs and satchels.....	Secs. 441, 442-443.
	Peaks.....	Sec. 447.

449. I am employing the term cover basketry in place of a better to denote the plaitwork built over and around certain vessels and implements for purposes of transport, protection, or decoration. The Warrau double-calabash float affords a very good illustration of the first of the uses to which such basketry may be put (fig. 185 A). The second has already been noted (sec. 95), the technique taking on either a hexagonal (pl. 21 A), a pentagonal (fig. 185 C), or a looped (pl. 21 B; fig. 185 B) form. Examples of the third or decorative object of cover basketry would seem to be rarely met with nowadays, except in the hair combs (sec. 517), and perhaps in cer-

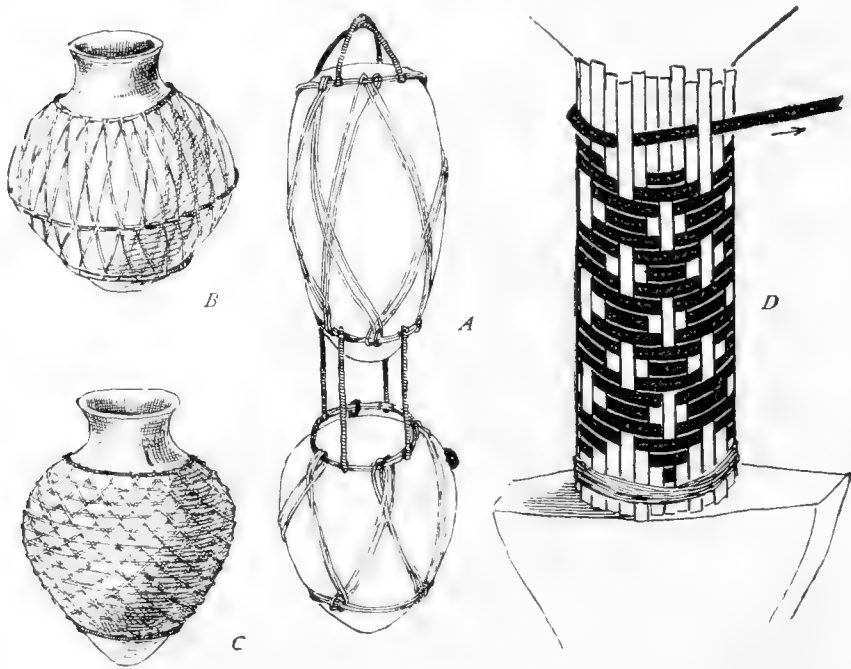


FIG. 185.—Examples of cover basketry.

tain forms of blowpipe (sec. 117). The only specimen of this kind of work that has ever come into my possession is a Makusi paddle-shaped club (pl. 37 A), where the plaitwork is of a twilled pattern with a single spiral weft. The method of manufacture (fig. 185 D) has evidently been the following: The portion of implement about to be decorated is covered with a single layer of separate warp, in close apposition, placed longitudinally, and firmly attached at their bases with kuraua twine. The spiral weft has then been introduced and wound around and around, left to right, from below up, producing in its course a pattern dependent upon the number and regularity of warps covered or backed.

450. Knapsacks.—A shoulder basket or knapsack is built of an open or close work rectangular foundation, to be subsequently attached to a light but strong frame, outside of which the projecting strands are plaited together to form the sides, or, if the general resemblance to a bedroom slipper is recognized, the “uppers.” The pattern of the mesh may or may not be identical throughout the foundation and sides, and with perhaps one exception (fig. 188) of

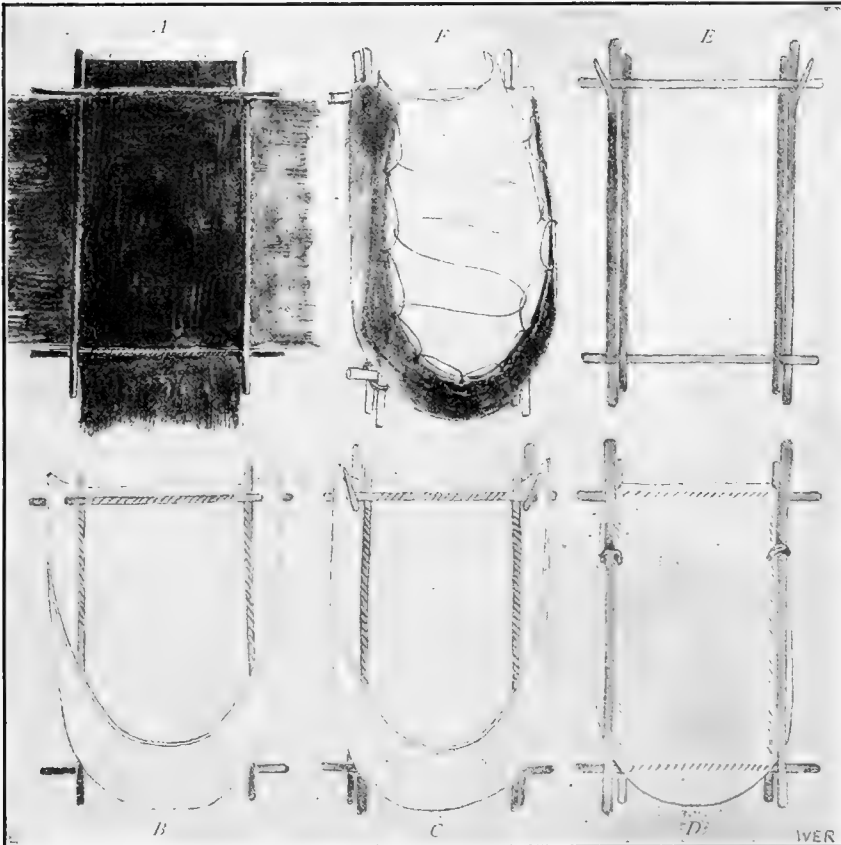


FIG. 186.—Manufacture of the knapsack.

all those seen in British Guiana, has its counterpart either in the mats, trays, or baskets that have already been drawn attention to. Though I am illustrating the various types met with among the Akawai, Arawak, Wapishana, Carib, Makusi, Taurepang (Arekuna), and Patamona, I have every reason to believe that further research beyond the area to which my wanderings have been limited will bring to light a very large number of variations (fig. 189). It is manufactured as follows (fig. 186): The frame (A) consists of two ver-

tical sticks tied to two transverse ones, above and below. The upper transverse piece lies in front, the lower one behind. On completion

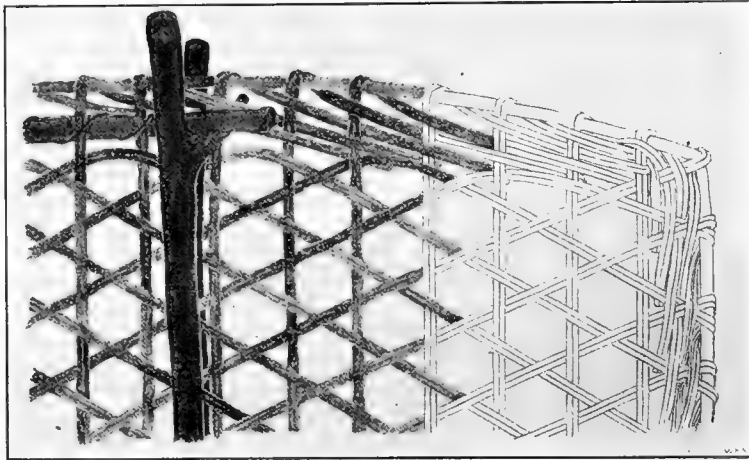


FIG. 187.—Diagram of Taurepang knapsack shown in plate 118 E, F. Itiriti strands doubled, but single in similar Patamona pattern.

of the plaitwork (B, C) and the trimming, etc., of the edges just like those of the pegalls (sec. 436), the back of the knapsack is strengthened with two additional thicker rods having forked ex-

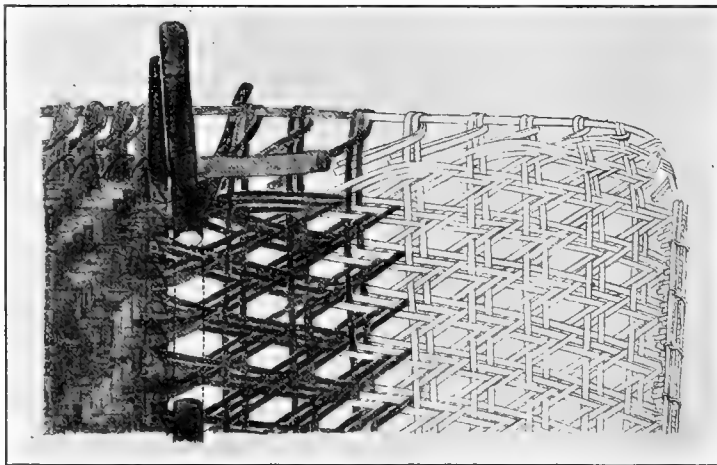


FIG. 188.—Diagram of knapsack shown in plate 118 C.

tremities (E), so arranged that they lie to the outside of the original ones, with their forks supporting the upper of the transverse pieces. Frame and supports are firmly tied together above and below, both through the interstices of, as well as outside of, the plaitwork (D).

Around the free edges of the basket are finally tied a series of loops (F), through which is passed the cord that tightens down the contents covered by the knapsack cover.

A strong band, either in the form of a bark strip of kakaralli, black mahu, etc. (sec. 392) or woven out of its fiber (secs. 61, 62) is attached to the angles of the upper crosspieces, etc. This strap is usually passed over the top of the head (pl. 118 A), and only rarely is it placed over the upper part of the chest. Our effects, says Schomburgk at Pirara, were packed in small tin canisters, each of the weight of about 25 pounds, which the Indians carried on a broad

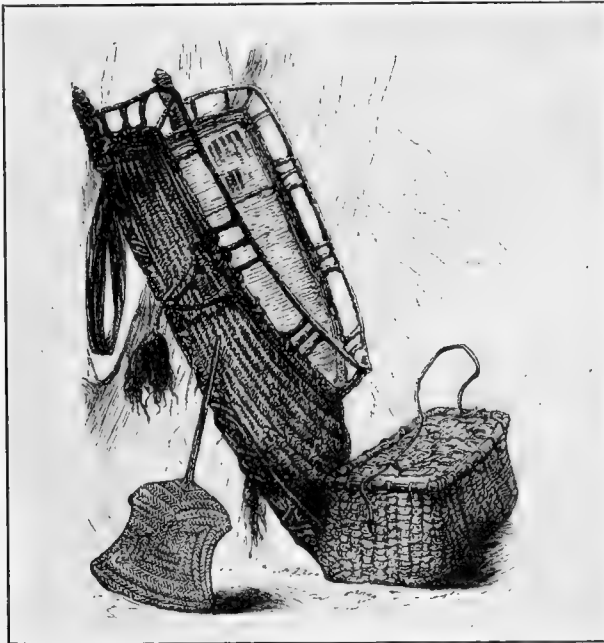


FIG. 189.—Basket, fan, and knapsack. Roucouyenne. (After Crévaux.)

band suspended from the forehead, either plaited of the young leaves of the ite palm (*Mauritia flexuosa*) or consisting of a bark strip of *Lecythis*. To make their load quite steady, it was fixed by other lashings round the shoulders, in the way soldiers carry their knapsacks. This is the general mode which the Indians adopt, whether male or female, for carrying burdens (ScF, 195). The method, noticed on occasion among the sterner sex, of passing the strap over the shoulders and under the armpits, would seem to be copied from the Creole Negroes.

The following are some of the names of these articles: Waiyari (Arawak), suriana and walishi or warishi (Carib), tiraga (Akwai), morutu and karari according as it is close or open work (Makusi), mabubu or pauwai, and aradu in similar conditions (Wapi-

shana) ; also as cartoweri (BB, 32) and catauri (CC, 49) ; in Cayenne, as catouri, hotte ; in Island Carib, catoli (RO, 579).

451. The accompanying illustrations (pl. 118 B-F; figs. 187-193) are intended to show various kinds of knapsack and of mesh that I have noted in their manufacture.

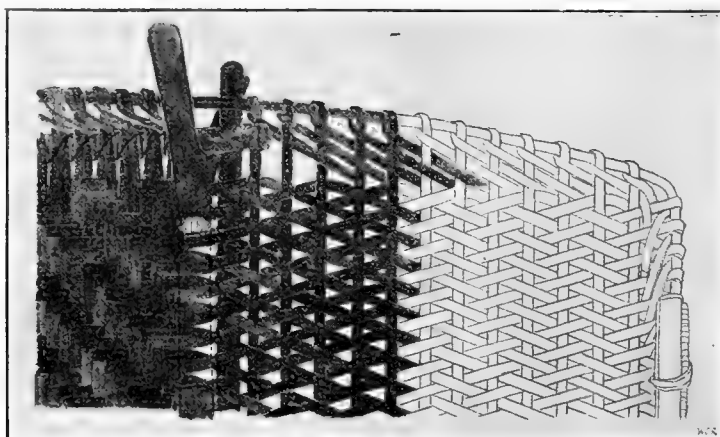


FIG. 190.—Diagram of knapsack shown in plate 118 B.

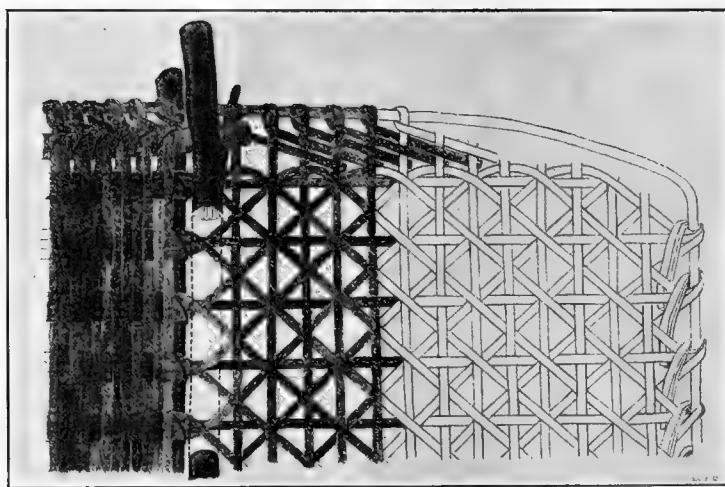
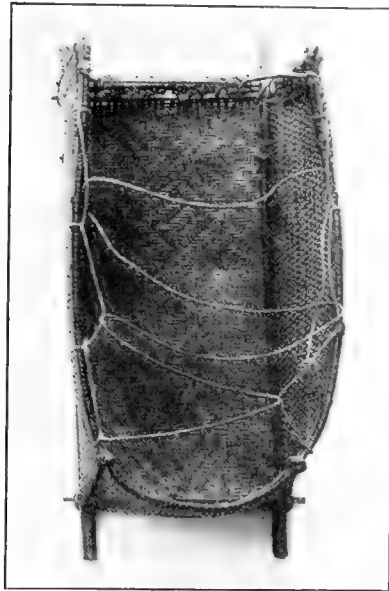
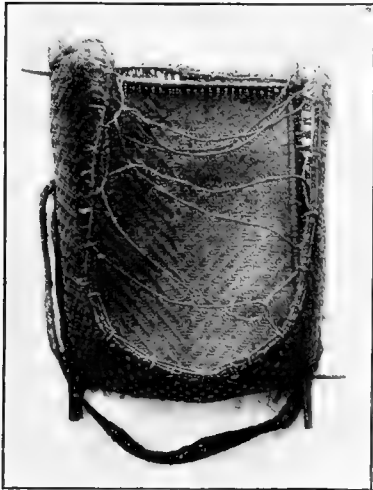
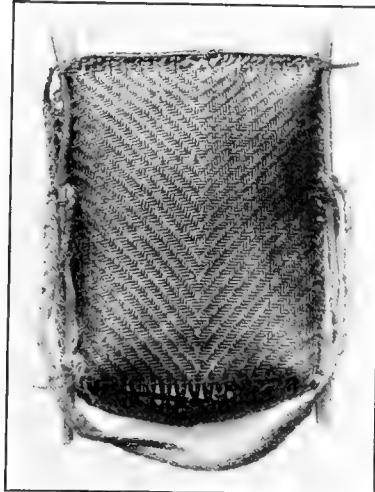
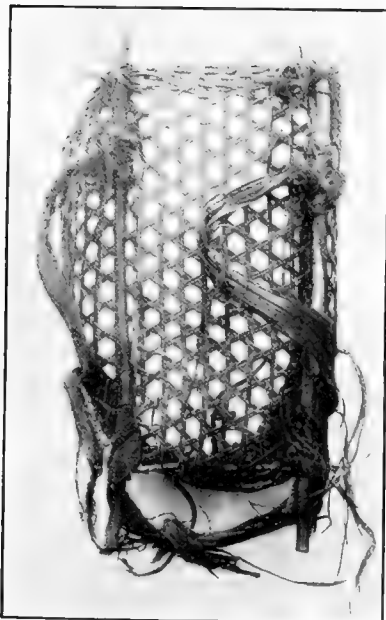
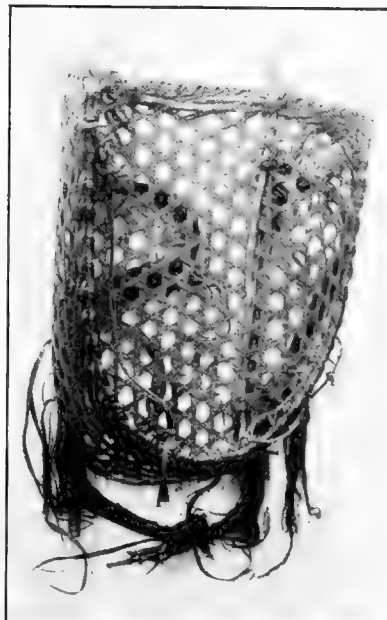


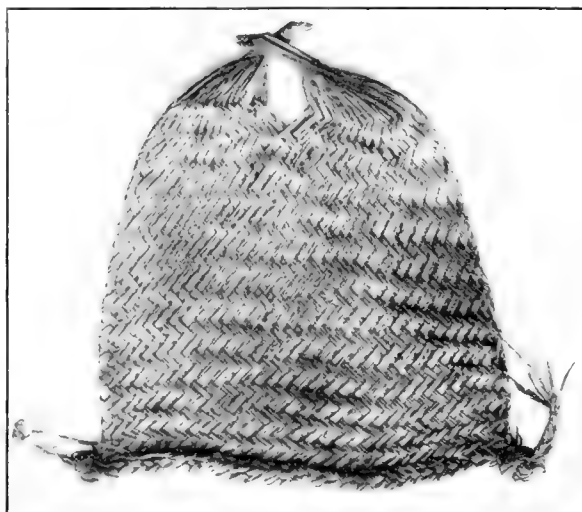
FIG. 191.—Diagram of Wapishana and Makusi knapsack. Crossed quadri-lateral openwork mesh after introduction of interpolated strands.

452. Knapsack covers.—To protect the contents of the shoulder basket from rain, it is either covered with any conveniently sized leaves at hand, arranged from below upward so as to overlap, or with a mat, etc. It may be provided with a specially constructed cover, usually wider below than above, so as to allow of its being tucked under the basket's edges. Among the Wapishana, this special

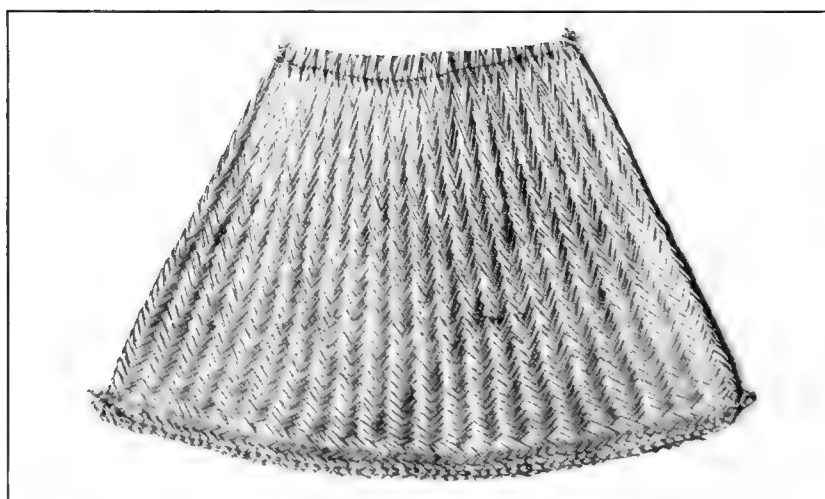
*A**B**C**D**E**F*

KNAPSACKS

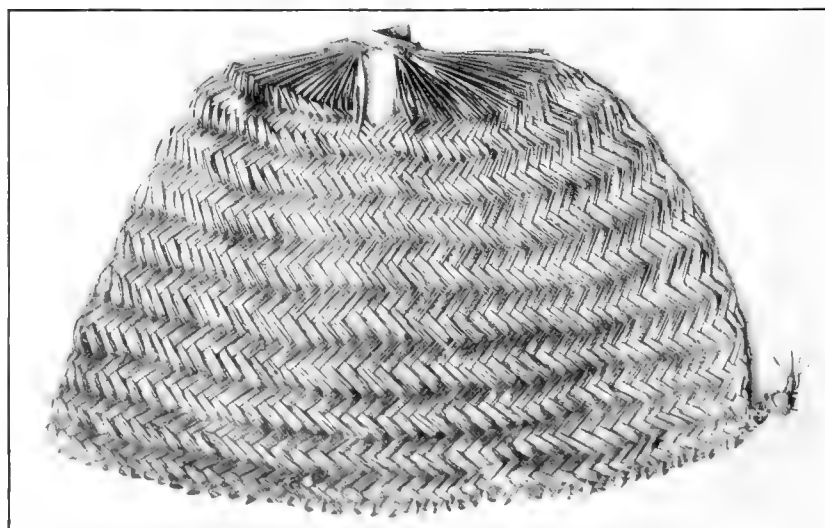
A, Method of carrying knapsack. Makusi. *B*, Knapsack. Akawai and Patamona. (For diagram see fig. 190.) *C*, *D*, Front and back views of knapsack found in Patamona camp. Source of origin doubtful. Perhaps old Makusi. (For diagram see fig. 188.) *E*, *F*, Front and back views of Taurepang knapsack. (For diagram see fig. 187.)



A, Knapsack cover made of two ite leaves plaited to form a pattern of horizontal stripes. Wapishana. Note the one-over-and-under-two plait and the symmetrical lower edging.



B, Knapsack cover made from the prepared leaflets of the akko-yuro palm plaited in a vertically striped pattern. Wapishana.



C, Knapsack cover made of two ite leaves plaited to form a pattern of horizontal stripes. Wapishana. Note the one-over-and-under-three plait and the asymmetrical lower edging.

cover is made either from ite or akko-yuro palm. With the former, two complete leaves are plaited together on the flat so as to form a pattern of horizontal stripes (pl. 119 A, C) or concentric rectangular figures. With the latter the septa (from which the midribs have been previously removed) are plaited into either horizontal or vertical stripes (pl. 119 B). With both kinds of leaves, the patterns can be plaited either in the one-under-and-over-two (pl. 119 A) or the one-under-and-over-threestyle (C). The lower edge of the cover is completed in one of two ways. All the strands projecting in the one direction are plaited together and tied, with the result that we get two conical bundles, placed end on end, the two corners appearing symmetrical (pl. 119 A), reminding one very much of the edging in the second group of mats (sec. 396). Or, all the strands projecting from both directions are plaited and knotted together at the one extremity, i. e., asymmetrical (pl. 119 C). The Makusi speak of all these knapsack covers as sú-mba (sec. 396). It may perhaps be that it is these same covers that are referred to in the following extract:

Among the Atorai and Wapishana, fastidious

(*délicates*) young girls sit upon dainty concave mats which they have themselves artistically plaited, and there they squat in all their nudity like a pretty fruit upon a plate. The others get their rumps all soiled with dust (Cou, II, 316). Or, again, with the two halves of a split ite leaf, the split septa without any plaiting may be held together by a twined weft passing backward and forward throughout their length (pl. 120 A).

453. Mats, trays, baskets, and knapsacks adapted from natural forms are made for either temporary or permanent use, those in the former category being rapidly put together in the case of an Indian out in the forest having some meat, fruit, etc., to carry, and nothing to carry it in. Leaves, sticks, and even bark may be employed under such circumstances.

454. The ite palm leaf is especially adapted for this purpose, and many interesting shapes of basket can be made from it. The leaf

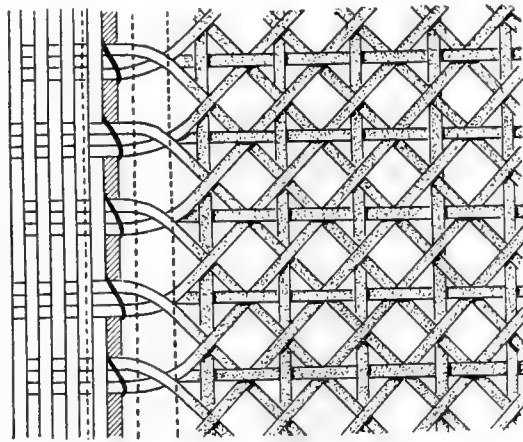


FIG. 192.—Diagram of Wapishana and Makusi knapsack. Crossed quadrilateral openwork mesh before introduction of interpolated strands.

is thus utilized by Warrau women, who make a sort of spoon-shaped scoop out of it (fig. 194) by successively interlacing the previously slit-down septa from alternate sides, starting with the outermost. After some half-dozen or so have thus been interlaced the remaining septa of each half of the leaf are plaited together into a tail, the two tails being finally crossed and tied along the distal margin of the basket. These people call it a horobihi. On the Rupununi River and its tributaries are also to be met some very interesting forms of single-leaf ite baskets, known as daro-an (Wapishana), pakaruma (Makusi), etc. (pl. 120 B, C).

455. But the ite leaf can also be split and used double, e. g., by Wapishana, Makusi, and others, to take on shapes, etc., that may be

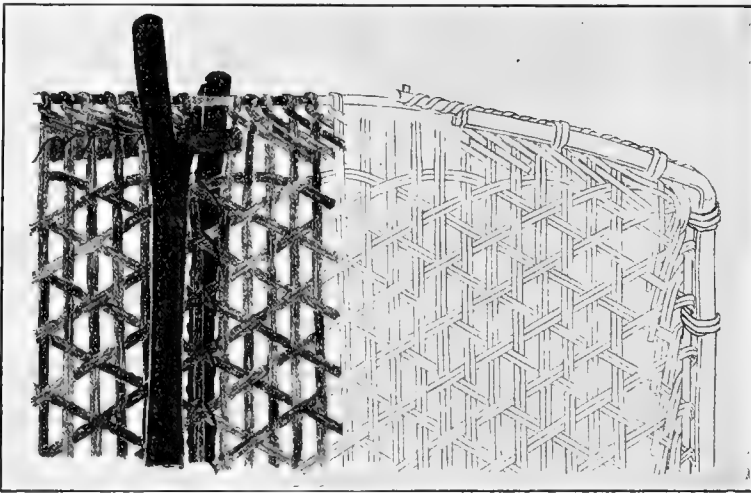


FIG. 193.—Diagram of Taurepang knapsack with a double itiriti strand. Similar to Patamona article with a double mamuri strand, and to Pomeroun Carib one with a single itiriti strand.

specialized under different names. For instance, there are the trays or "plates" for handing food to visitors on, etc. (pl. 121), which, from their resemblance to the shape of a sting-ray, are known as tchúpare (Makusi) or yi-bur (Wapishana). The patterns may be either horizontal or vertical, while the leaf-tips themselves are either plaited into sides and rim or else into a band running down the back. Then, again, there are baskets, each of two half leaves, plaited in such a way as to form baskets for carrying the pepper pot (pl. 122 A, B, C), and known as sintakai-an (Makusi) and ka-irrkinkinyan (Wapishana), and other similar but larger ones (D), not used for transport but for slinging up, by strings attached at the extremities, to the house beams. Then there is the squat little basket (pl. 123 A), which, owing to its resemblance to the larynx of the howler monkey—

an article used elsewhere as a box for holding paint, etc. (sec. 385)—goes by the name of *to-mo* (Makusi) or *tsubirawá* (Wapishana). Most useful of all, perhaps, are the temporary knapsacks (pl. 123 B, C), with the split halves of the *ite* leaves plaited into one another in certainly at least one of three ways: a closework, a hexagonal (pl. 123 B), and a twined (C) mesh. In the closework pattern the two ends of the leaves project at the lower ends, whence the Makusi call the basket a *pochi-panaiyang*, i. e., night-owl ear. The specimen which I had selected for photographic purposes was unfortunately lost en route, and hence I can offer no illustration. The Wapishana

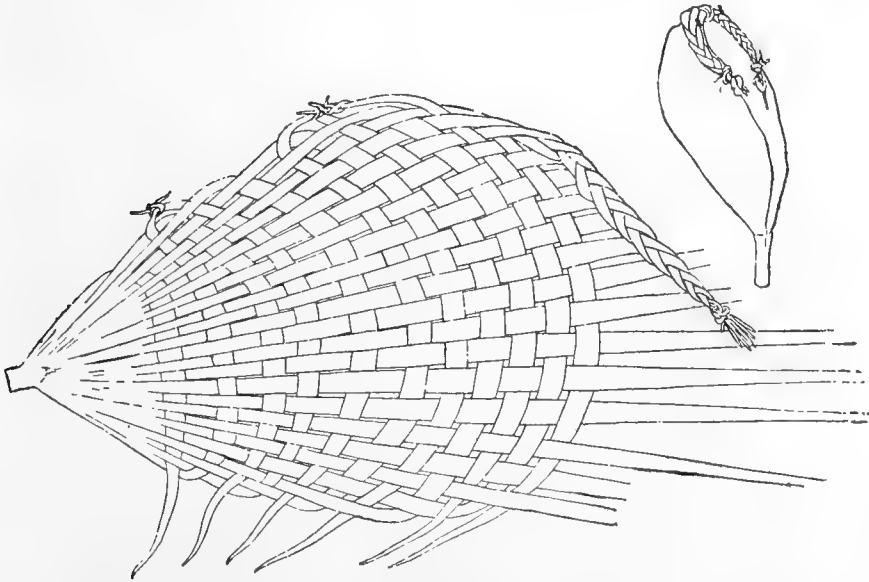


FIG. 194.—*Ite-leaf scoop basket.*

describe all three varieties as *pauwai*, a name which seems to be applied by them to any fairly large carrying basket.

456. The leaves of the *turu* and the *manicol* palm (pls. 124, 125) are used for the larger and stronger baskets, especially for knapsacks, etc., when heavy weights have to be carried. The Pomeroon Arawak and Carib will thus employ the *manicol* for purposes of temporary expediency in one of at least four different ways:

(i) Having removed two comparatively short but equal lengths of midrib with attached septa, they are placed opposite one another and the septa on both sides plaited together (pl. 125 A). The bottom of the basket is subsequently closed in similar manner by commencing to plait at the lower extremity of each midrib (B). Should the mouth of the basket prove too "open," an extra piece of midrib (*m*) with attached septa may finally be added. From its resemblance in general

shape (C) to the "adam's apple" of the howler monkey, the Arawak name of the completed article is itore-oyóre, i. e., baboon larynx.

(ii) Again, four much longer, equal lengths of the leaf may be plaited together on the flat, by means of their contiguous septa, but in such a way that those on the outer side of each pair of midribs remain free for the present (pl. 124 A). In the one variety of basket (B) the midribs are bent from below up at a spot between the third and fourth quarter of their length, the hitherto free septa being ultimately plaited together from below up to form a receptacle very like a knapsack. I have seen considerable weights of raw clay carried in these baskets (pl. 125 D, E).

(iii) In the second variety the two pairs of midribs are bent up at both ends (C), and the outer sets of free septa plaited together into a common center (*h*) on each side, to form ultimately, when joined, the handle of what is practically a hand basket (D).

(iv) On the Pomeroon, with a single leaf, the midrib is sharply bent into three approximately equal portions into the shape of the letter L, the vertical bar of which is formed of the midrib doubled on itself (E). The septa of the two constituents of this vertical bar constitute the weft, while those on the horizontal bar (the bottom of the basket) constitute the warp. The free ends of the weft, from alternate sides, are plaited into one another and into the extremities of the warp to make the handle.

On the Rupununi I have seen the kokerit leaf applied to similar purposes (pl. 126 A).

457. Even if suitable leaves should fail him the Indian will nevertheless utilize withes and bark strips wherewith to carry the unexpected load (pl. 126 B, C). He will break and tie the former into three oval and two circular hoops to form the framework for the back, sides, and ends of his knapsack, tie them together, and fill up the interspaces with the bark strips interlaced in all directions. Another broad bark strip tied on either side of the frame will enable him to hang it from over his chest. I have observed these make-shifts in the Makusi and Patamona country.

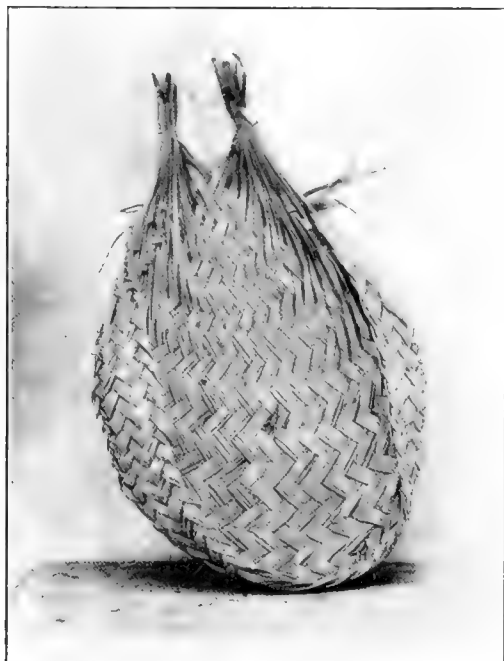
*A*

A, Knapsack cover made from the two halves of an ite leaf, the split septa (without any plaiting) being held together by a twined weft passing backward and forward.

*B**C*

B, C, Single leaf ite satchels from the Rupununi. Wapishana and Makusi.

KNAPSACK COVER AND SATCHELS



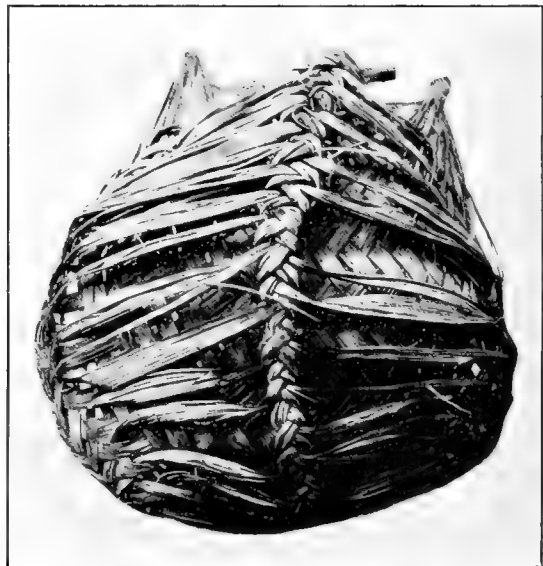
A



B



C



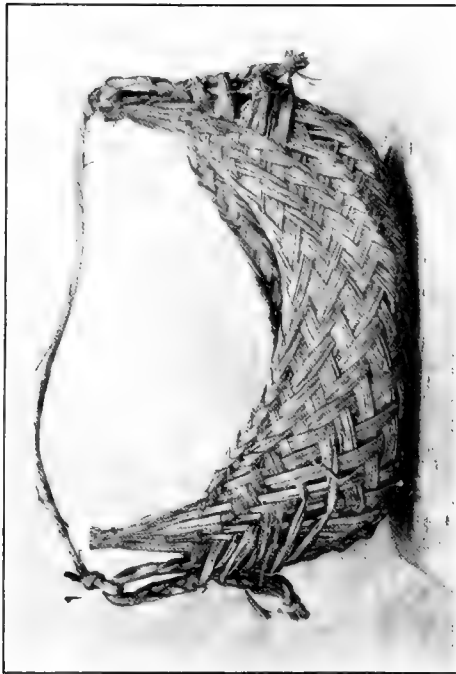
D

SPLIT LEAF ITE TRAYS FOR HANDING FOOD TO VISITORS, ETC. MAKUSI AND WAPISHANA

A, C, Horizontal patterns; B, vertical. C, D, Front and back view of the same "plate."



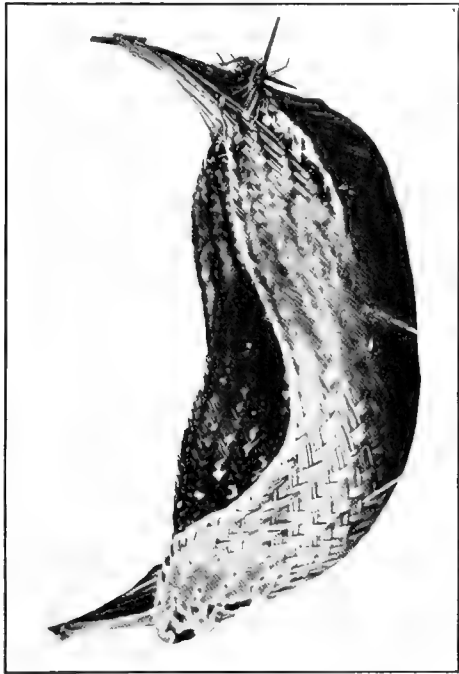
A



B



C



D

ITE LEAF CARRIERS FOR THE PEPPER POT

A, B, C, Split leaf ite baskets for transporting the pepper pot. D, A larger one for slinging it up. A and C are made with care, i. e., in the orthodox fashion. B is the lazy man's way of plaiting it.



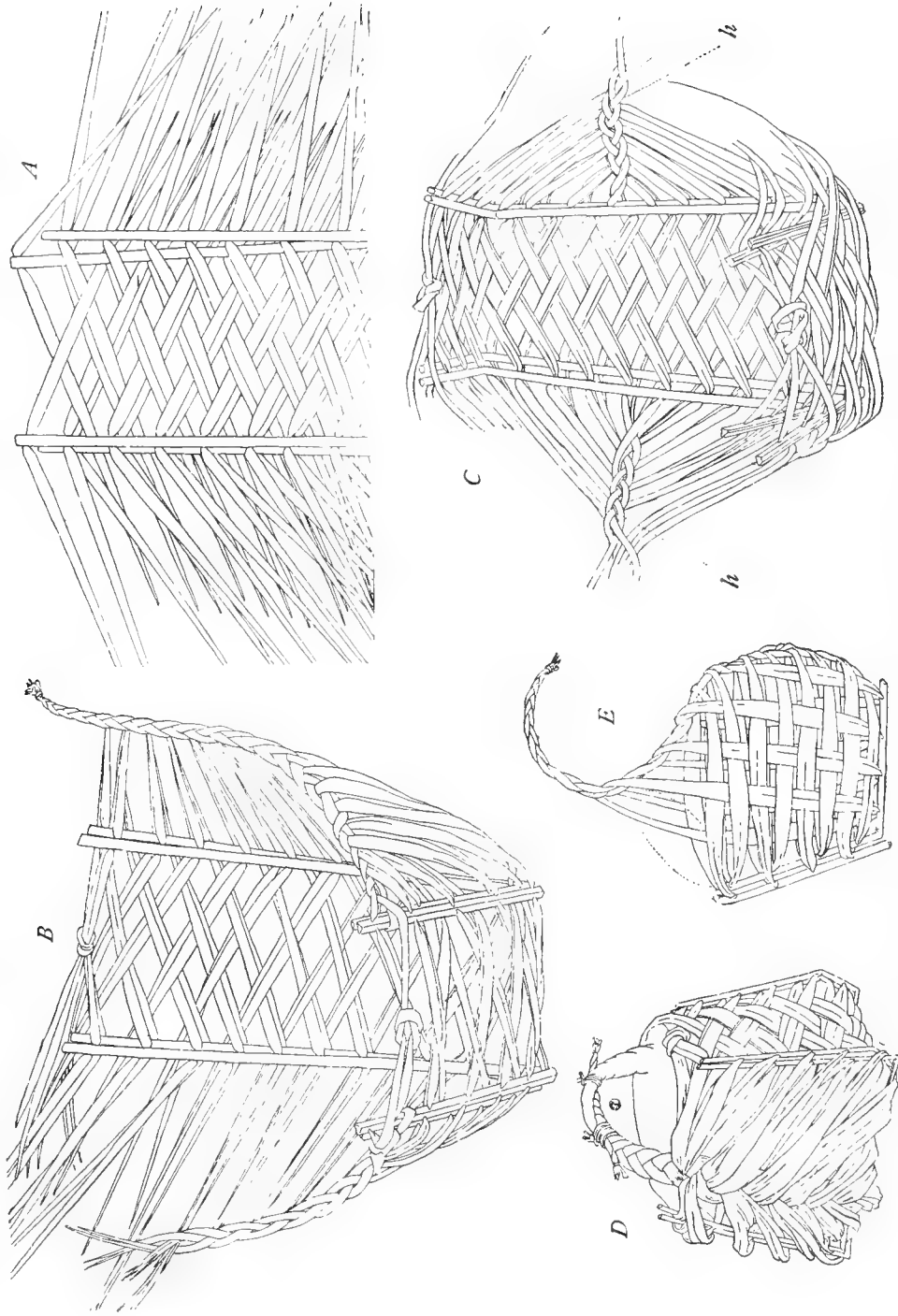
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A, The ite-leaf "throat box" basket of the Makusi, etc.

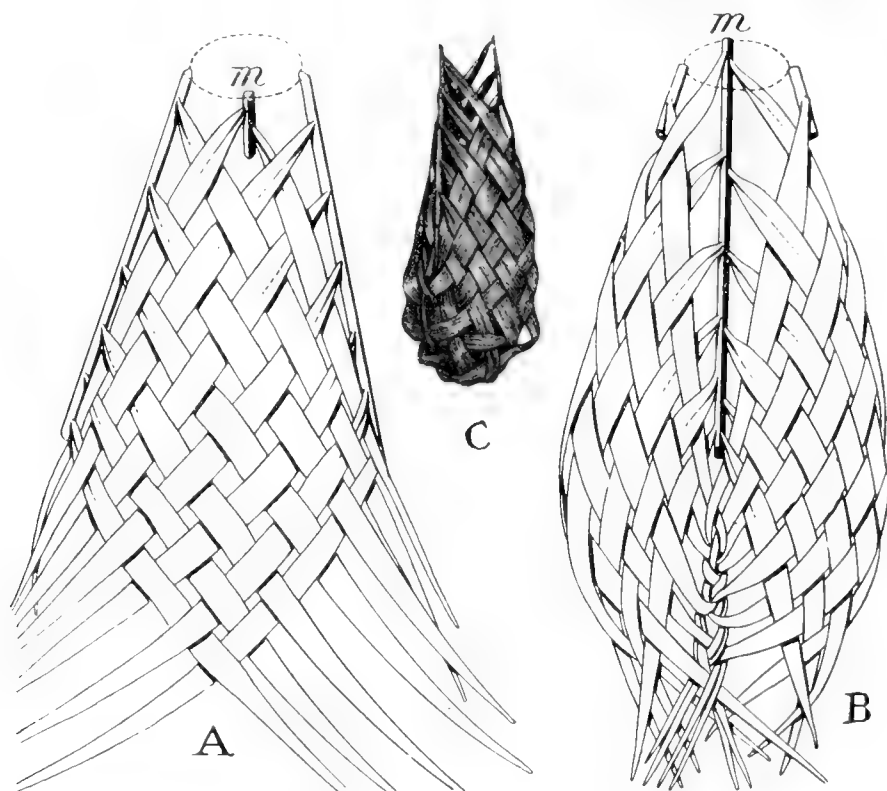
*B**C*

B, *C*, Ite leaf knapsacks. Makusi, Wapishana, etc. *B*, Hexagonal pattern; *C*, Twined pattern.

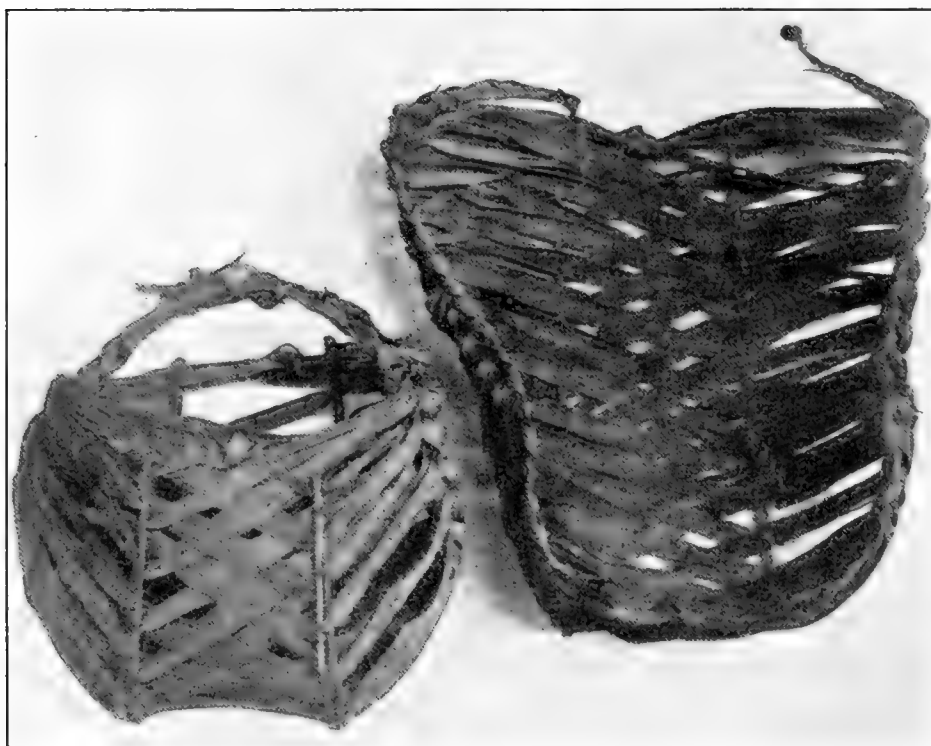
ITE LEAF BASKET AND TEMPORARY KNAPSACKS



TURU AND MANICOL LEAF KNAPSACK AND BASKETS FROM THE POMEROOK. (After Roth.)



A, B, C, Turu or manicol leaf "throat box" basket

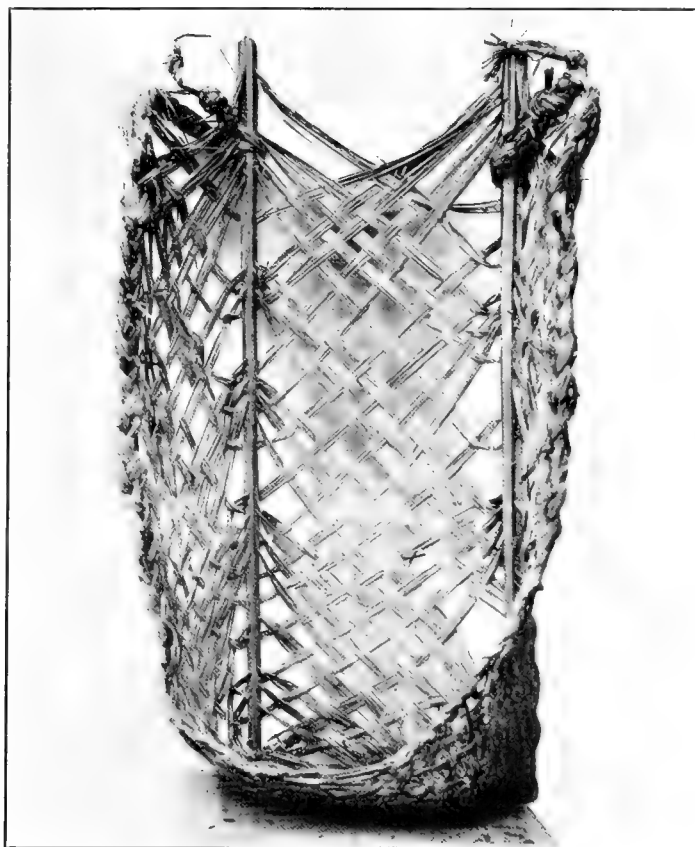


D

E

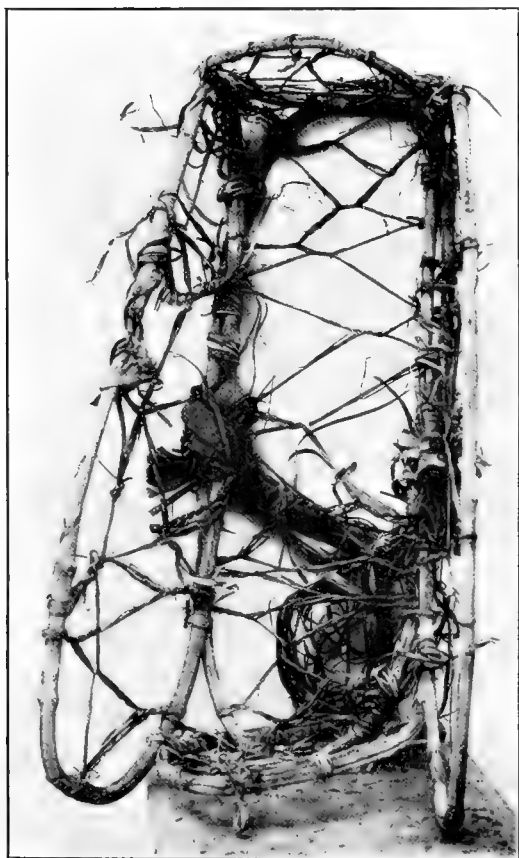
D, E, Manicol leaf basket and knapsack from the Pomeroun. They are respectively identical with D and E in plate 121.

TURU AND MANICOL LEAF BASKETS. (After Roth.)

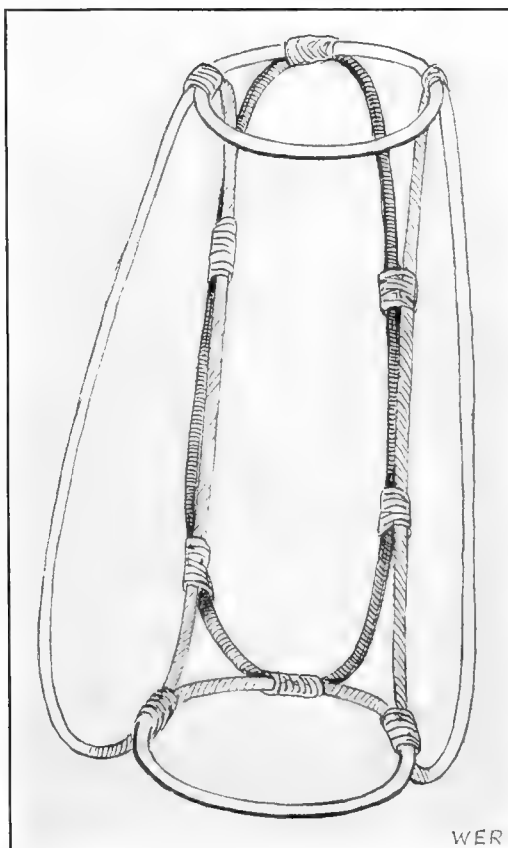


A

A, Kokerit leaf knapsack from the Rupununi River.



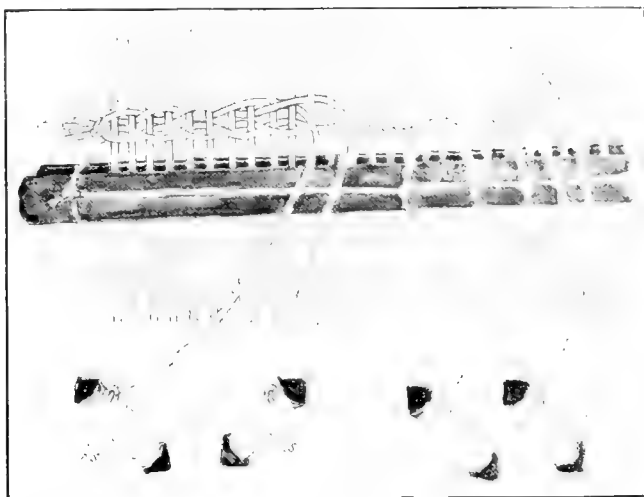
B



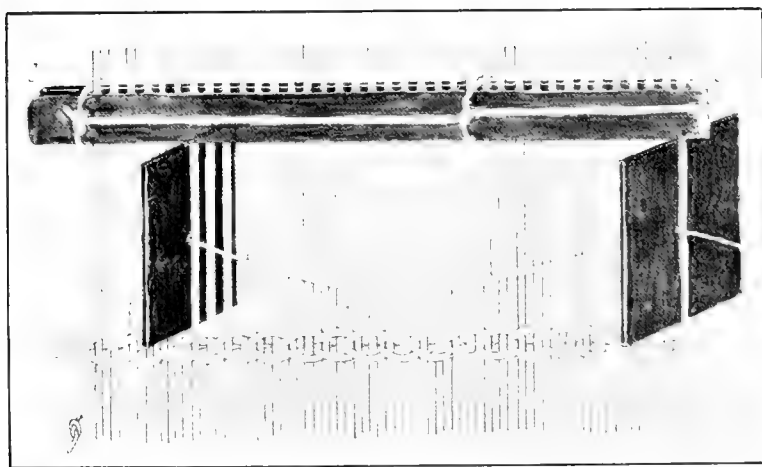
C

B, C, Temporary knapsack formed of withes and bark strips. By means of the bark band at the back it will be slung over the carrier's chest.

LEAF AND BARK STRIP KNAPSACKS



A, Manufacture of cotton hammock. Frame of two horizontal beams, etc. Warp vertical, weft horizontal. Front set of warps undivided. The first bar (weft) of two chain-twists (*ts*) is being made with four knobbed spools (*ts*), and two warps are taken up at a time. The level (*li*) keeps the line even.



B, Manufacture of cotton hammock on frame of two horizontal bars, warps vertical, weft horizontal. Front set of warps undivided. To insure the bars (weft) being equidistant, etc., the rectangular wooden laminae are inserted.

COTTON HAMMOCK MAKING. WARP VERTICAL, WEFT HORIZONTAL. FRONT SET OF WARPS UNDIVIDED

CHAPTER XIX

HAMMOCKS

Preliminary (458); materials (459).

Manufacture on a frame of two vertical posts: The cotton hammock of the Arekuna (460); the tucum, etc., hammocks of the Upper Rio Negro (461); cotton hammocks of the Arawak, Carib, Akawai, Makusi, Wapishana, etc. (462); the ite (sarau) hammock of the Warrau (463, 464).

Manufacture on a frame of two horizontal timbers (loom) (465); warps interwoven, without division (466); with division (467); permanent separator (468); raiser (469); temporary separator, beater, or presser (470) and their manipulations (471); geographical distribution (472); variations in the bar of the cotton hammock (473, 474); an obsolete variety (475); cotton hammock ornamentation (476).

Manufacture of the ite (sensoro) Warrau hammock (477).

Hammocks: Coloration (478); classification (479); scale lines (480); method of slinging (481, 482).

458. The first mention in history of a hammock is in Chanca's letter relative to the second voyage of Columbus—the hamaca of the Santo Domingo natives. The bed was made of cotton network, and, according to their custom, suspended (DAC, 450). Another kind of bed besides the cotton hammock used by the Island Carib was the cabane, a quantity of banana or other leaves placed on several withes wattled across, the whole suspended at the four corners with thick ropes (RO, 490). Wilson, who was on the River Wiapoco (Oyapock), Cayenne, in 1606, writes thus about the Indians' beds, "which they call Hamakes; they are some of them made of cotton wooll, and some of barks of trees; they use to lye in them hanging" (JW, 348). Some 20 years later Davies had this to say about the natives on the Amazon stream: "The manner of their Lodging is this: they have a kinde of Net made of the rinde of a tree which they call Haemac, being three fathom in length, and two in breadth, and gathered at both ends, at length, then fastening either end of a Tree, to the full length, about a yard and halfe from the ground: When hee hath desire to sleepe, hee creepes unto it" (DW, 415). On the Berbice the cotton hammocks had a board at each end (BER, 131). These descriptions seem to bear interesting comparison with that of the very primitive article of the Mura Indians of the lower Amazon—a rudely woven web of ragged strips of the inner bark of the Mongúba tree (HWB, 157). So large is the seed pod of the kokerit palm that, with a cord fastened at either end, it is frequently used as a child's cot in place of a hammock. Some of the tribes, e. g.,

Guajiva, Chiricoa, and Guama, would seem to have slept on the hard ground without any covering except the open air (G, II, 192).

459. At the present day hammocks are met with throughout the Guianas, and vary not only in material but in technique. The materials out of which they are known to have been woven are cotton, ite, tucum, yauary (awarra), samee, and kuraua. On the Orinoco, the ite-fiber hammocks were known as chinchorro [? the modern sensoro of the Warrau (sec. 477)], nets of the common people as distinguished from the hamaca made of cotton, the beds of the mag-nates (G, I, 144; II, 93). Like the cotton, the ite hammock had a very wide distribution in the Guianas, and especially in the case of the Warrau constituted an important article of trade. At Sao Gabriel, on the Rio Negro, Schomburgk describes how the chief employment of the women was in the manufacture of hammocks from the mauritia palm (ScQ, 254).

The tucum article is much stronger than the ite. A samee or samec hammock is mentioned by Bancroft from the Demerara (BA, 95, 296).

Silkgrass or kuraua (*Bromelia*) hammocks were found among the Surinam Arawak (StC, I, 330; WJ, 84) and on the Rio Negro, but no details of the technique are available. According to Coudreau they would seem to have commanded very high prices, for, while the mauritia hammock sold for from \$20 to \$25 and the tucum for from \$50 to \$70, the kuraua one fetched from \$100 to \$400 (Cou, II, 220). It was with the now obsolete huge cotton hammocks of the Corentyn Arawak that the Moravians, it is said, made quite a little trade, for most of the inhabitants of the lower settlements (the narrative continues) sleep in them, as they prefer them to beds. They therefore send them now and again down to Surinam and Berbice, where they bring a high price—from 9 to 12 joes, which is from 17 to 19 pounds sterling (StC, I, 295).

460. The cotton hammock of the Arekuna (Taurepang), found also among some of their Patamona neighbors, is probably the simplest of its kind. Two posts are stuck into the ground at a distance of 6 or 7 feet apart, with perhaps, but not necessarily, a crosspiece tied above to steady them, and the warp rolled horizontally from below up in close contiguity, commencing on the left hand, so as to form a front and back set of strands (fig. 195). Ear bar (weft) formed of two strands, or what is practically the same thing, one strand doubled on itself, is put on from above down, like a chain twist, each link in the chain inclosing two warps, and finally tied in a knot below. I have also seen the weft manufactured from below up. Of the two warps so inclosed one is taken from the front set and the other from the back set of strands. The first bar is put on

toward the left of the frame. On completion of the bar a light lath or cane is placed to its right, and close to it, between the front and back sets of warps and left there. The object of its insertion is to facilitate the manipulation of taking up a warp from each set which otherwise would be in close apposition and difficult to distinguish, and also to get the bar quite straight. As it is the two warps can be now picked out easily and quickly by passing the left forefinger between them in the interspace between bar and lath, and so hooking them downward and forward to make the next link in the bar. When all the bars are completed the hammock is slipped upward off the two posts. The scale lines are then attached to the loops that have been around the posts beyond the extreme bars.

461. Tucum and yauary fiber hammocks are to be seen on the branches of the upper Rio Negro. The simpler kinds are apparently identical in structure with the cotton Arekuna ones just described,

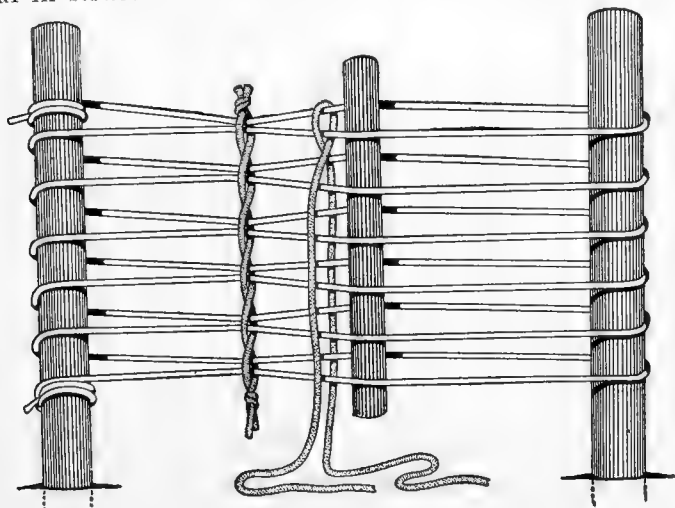


FIG. 195.—Hammock making. Frame of two vertical posts; warp horizontal, weft vertical; each bar (weft) of two threads.

but they differ in technique. The "frame" consists of a horizontal bar to each extremity of which a peg is attached, the distance between the pegs limiting the length of the hammock. The pegs, in fact, correspond with the two vertical posts around which the warp of the hammock just described is wound. The weft is attached at given distances along the bar, and its ends hang free. A long thread, after being strung around both pegs and tied, forms the first two warps, which are now looped up throughout in the usual way, with the chain twist formed by the two weft strings. A second pair of warps is placed in position, and these similarly treated. The process is thus continued until the last pair of warps is tied, the hammock hanging all the while from the

crossbar. Once the threads have been prepared, etc., the weaving of such a hammock can be completed in a day. The material of the bars (weft) is usually the same as that of the warp, but occasionally, with a view to increasing the durability of the article, they may be made of kuraua twine (KG, II, 210-211).

462. In the next variety of hammock, also of cotton, met with among Arawak, Carib, Akawai, Patamona, Makusi, Wapishana, etc., and thus of wide distribution, there is a similar arrangement of horizontal warp with vertical weft, on two posts, and the insertion of a lath or withe to separate the front and back set of strands. The difference, however, lies in the double number (four) of weft strands in each bar, and in the manner of weaving them. This is effected as follows:

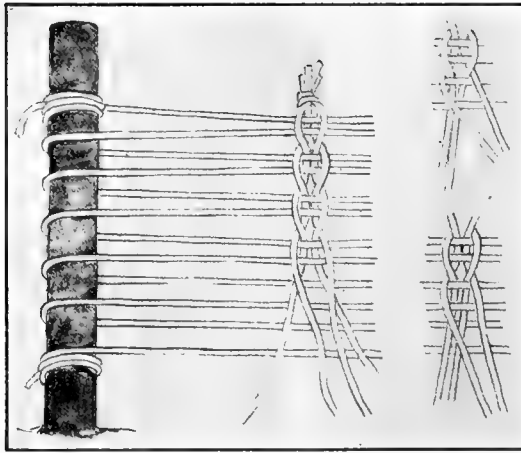


FIG. 196.—Hammock making. Frame of two vertical posts; warp horizontal, weft vertical; each bar (weft) of four threads. Two warps taken up at a time.

Now slip the anterior wefts behind the next pair of warps (one from the back and one from the front set), and the posterior ones in front of them, similarly arranging that the latter pass to the outer sides. The diagram (fig. 196) will help to make this description clearer. The process is thus repeated until the last pair of warps is reached, the bar completed, and the four strands knotted. The first bar, instead of being woven toward the left-hand side of the frame, as in the simpler Areakuna type, may be made at the center and the remaining bars worked to the right of it. When the right half of the hammock is thus completed, the remaining bars are started from the left of the central one, and so worked outward to the side. Furthermore, instead of weaving the bars from above down, they may be made from below up—a method which the Indian women tell me is somewhat quicker.

463. The "sarau" hammock of the Warrau, their so-called "bar" hammock of the Pomeroon district, is manufactured on the same

principles as the preceding, save that a single warp is taken up at a time (fig. 197), alternately one from the back and one from the front set. It must be remembered, however, that in the last bar on the extreme right and left two warps are taken up at a time, a front and a back one. As a result, these two bars are shorter than the intermediate ones, thus assisting in giving shape to the hammock when completed. The bars (wefts) are usually woven from below up. The warp is here made of its fiber and the four weft strands (bar) of cotton. The reason given for the employment of cotton is that, owing to the increased friction, there is no chance of the weft slipping along the warp.

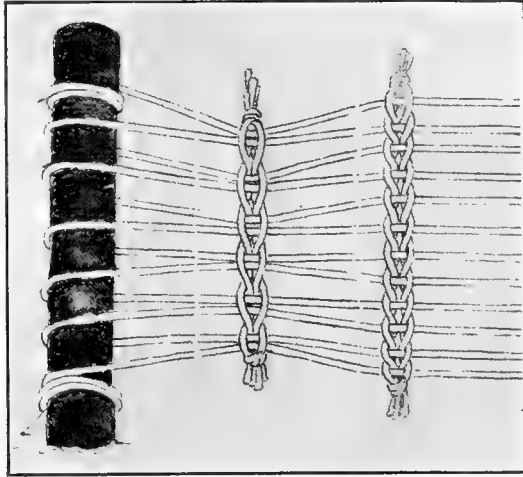


FIG. 197.—Hammock making. Similar to preceding, but, except on extreme left and right, only a single warp is taken up at a time.

464. Finally there is a cotton hammock made by the Barama River and other Carib, and I believe also by certain Makusi, similar to the preceding sarau (sec. 463). Here, except with the extreme right and left bars, which are manufactured on identical lines, only one warp is taken up at a time, but alternately for each bar (fig. 198). In other

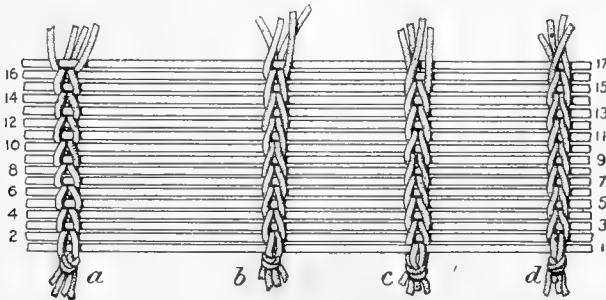


FIG. 198.—Hammock making. Similar to preceding, but, except on extreme left and right, a single warp is taken up at a time alternately for each bar.

words, starting, say, from below up, with any particular bar, the four weft strands will inclose warps 1, 3, 5, etc., but in the adjoining one the warps taken up will be 2, 4, 6, etc., in the next one warps 1, 3, 5, etc., again, and so on. The result of this arrangement is that, what with the resiliency, overlapping of the warps, and closeness of the texture, the bars are only visible on the one (the outer) side of

the hammock, the other being rendered smooth and comfortable to lie on. Occasionally two or four single additional weft strands may be interpolated in similar fashion (alternate) between every two bars.

465. In the following series of hammocks made on a square movable frame (fig. 199), the cotton warp is run vertically and the bars (weft) horizontally. The Makusi distinguish them from the previous ones by calling the latter *nonga-kang* (earth, ground) and the former *yeya-kang* (beam). The frame, resting on the slope slightly

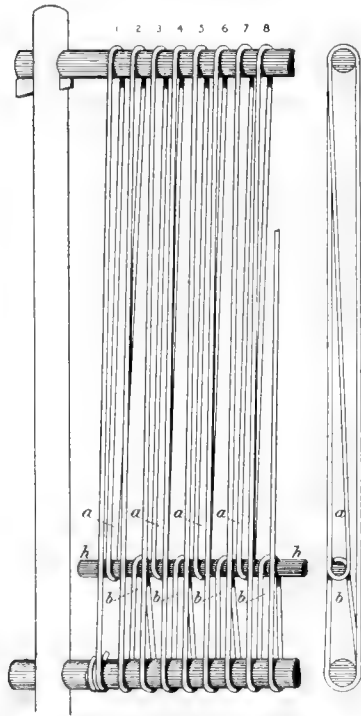


FIG. 199.—Manufacture of a cotton hammock. Diagram to show how vertical warp is run indirectly over a head stick (*h*) which, when finally pulled out, allows the article to be removed whole.

backward, is made of two uprights joined by crossbeams above and below (the latter about a foot from the ground), the fixture of the lower beam being usually a permanency (peg, rope, or mortise), that of the upper being a mortise with removable wedge, the object of which will be appreciated later. The whole frame, or vertical pieces only, is known as *kaulu-ngai* (Wapishana), the horizontal pieces as *taramiruna* (Wapishana). Another peculiarity common to the series is that the warp is run in close contiguity from cross-beam to crossbeam, not direct, but over a "head" stick, *pupai-yapong* (Makusi) or *yuru* (Patamona) after the name of the palm whence it is cut, which, when finally pulled out on completion of the weaving, allows the article to be removed whole. The diagram (fig. 199) will serve to explain this arrangement, where *a* will represent the loops at one end and *b* those at the other end of the finished hammock. The head stick (*h*), it may be

noted, can be arranged either on the front or back set of warps. In the present case it is depicted on the back set.

466. The varieties met with in this series of hammock will now depend upon whether the front set of warps is woven upon just in the same condition as it stands or only subsequently to being divided or split into an anterior and posterior layer of strands. In the former case the procedure is thus continued: Having rolled some cotton on four knobbed spools (fig. 200), known as *kane-yapong* (Makusi), *tinuiki* (Patamona), etc., and looped it on each so as to

prevent accidental unwinding, their four ends are knotted together, placed on the left hand of the warp, low down on the frame, and woven in two series, an upper and a lower chain twist (or twined pattern), after a fashion illustrated in the diagram (pl. 127 A), the left hand picking up two warps at a time. The lower chain is, of course, made first, and its ends will hang at the extreme right of the warp, while the operator, a woman, proceeds with the upper chain.

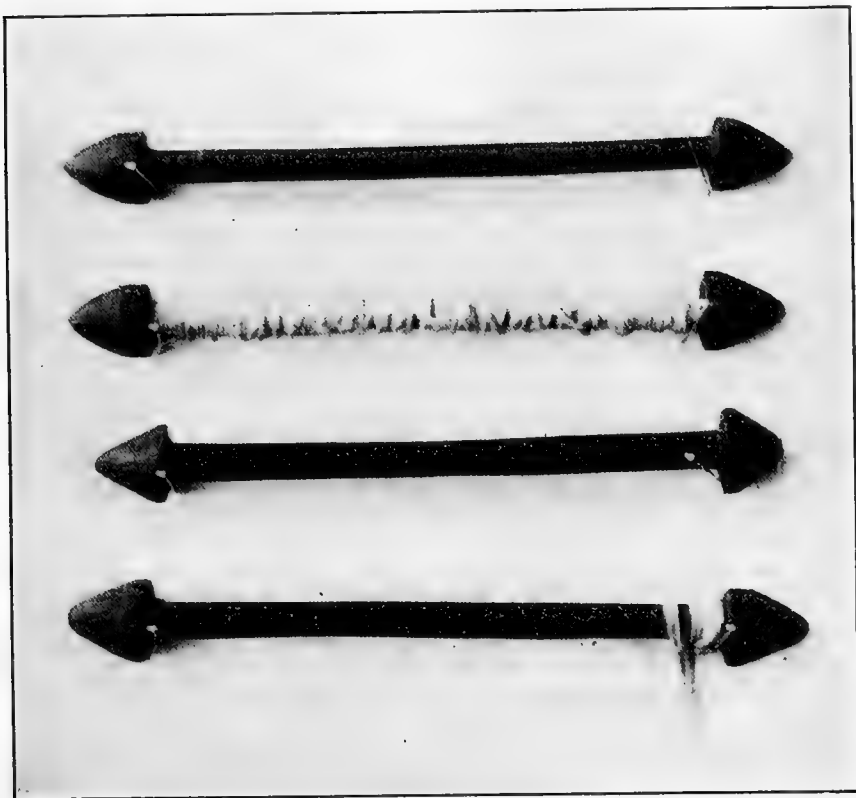


FIG. 200.—Knobbed spools for hammock making.

Of the two, the latter is the easier and quicker to make, and hence when the husband feels inclined to help his wife a little—as a matter of fact, men very commonly assist—it is generally this one which he chooses. To insure the two chains running quite horizontal, a level (kushibir=Wapishana, any palm strip) has been previously attached to the warp below them. This (*l*) consists of two straight-edged laths or split pieces of cane, palm, etc., fixed front and back, and so, in addition, serves to keep the separate warp strands in regular sequence. When both chains are completed their four constituents are knotted together at the extreme right of the warp, and one bar (weft) is

finished. If the bar be now examined, it will be recognized that while in pattern it is identical with that described in preceding series (secs. 462-464), in technique it is entirely different. Bar upon bar thus comes to be woven, each intervening space being carefully measured by means of thin rectangular wooden laminæ (pl. 127 B) slipped here and there in between the warp strings. These laminæ (dadaralib=Wapishana, to tighten up) are cut to an exactly similar size and are usually threaded, some four or five together in a string (of a

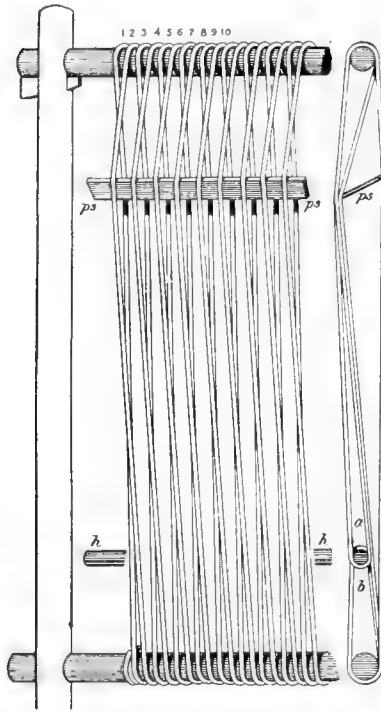


FIG. 201.—Hammock making. Frame of two horizontal timbers. Division of front set of warps into an anterior and posterior layer, with the permanent separator.

length a little greater than the width of the warp) passing through an aperture at their centers. On completion of a bar they will be inserted here and there, resting on its edge, their upper limit regulating the distance on which the level, removed from below, has now to be refixed so as to insure the next bar being exactly parallel. As soon as the upper crossbeam is reached the wedges on either side of it are removed and the vertical height of the frame slightly reduced. This now allows of the whole front set of warps being rolled downward upon itself or revolved, as it were, over both horizontal beams until the last completed bar comes down to about the same level on which the first one was made, and what was previously the back set of warps comes to be the front set. The wedges are next reinserted and the work resumed as before, bar upon bar, until the article is finished. Finally, by slipping out the headpiece, the hammock is removed bodily from the frame. These hammocks are to be seen among Wapishana and Makusi.

467. In those cases where the front set of warps is split into an anterior and posterior layer the method of procedure is more complicated. I will again consider that the headpiece has been attached to the back set of warps, bearing in mind that, so far as the actual weaving is concerned, it is quite immaterial upon which set it has been fixed, because the whole warp, as has been already mentioned, can be rolled or revolved from the front to the back as desired. The

length a little greater than the width of the warp) passing through an aperture at their centers. On completion of a bar they will be inserted here and there, resting on its edge, their upper limit regulating the distance on which the level, removed from below, has now to be refixed so as to insure the next bar being exactly parallel. As soon as the upper crossbeam is reached the wedges on either side of it are removed and the vertical height of the frame slightly reduced. This now allows of the whole front set of warps being rolled downward upon itself or revolved, as it were, over both horizontal beams until the last completed bar comes down to about the same level on which the first one was made, and what was previously the back set of warps comes to be the front set. The wedges are next reinserted and the work resumed as before, bar upon bar, until the article is finished.

back set of warps must again be temporarily discarded, and is no longer represented in the illustrations, except in cross section.

468. The division or splitting of the front set into an anterior and posterior layer is effected by counting the strings from left to right at the level of the upper beam (fig. 201), separating the odd from the even, and keeping them apart by a lath or rod (*ps*) which, for the reason that it has to be retained in the same relative position permanently throughout the process of manufacture, can be described as the permanent separator (*skotelibi*, Wapishana). In the case illustrated the odd numbers make up the posterior layer and the even ones the anterior.

469. Once the division is effected and maintained (fig. 202) an apparatus is devised for bringing forward, for raising, any or all of the posterior layer strands, as the operator may require, so as to admit of the passage of the weft behind them. This apparatus, or raiser (*yunando*, Makusi, to pick up, to raise; *iséranna*, Wapishana), is made of cotton, and consists (*r*) of a number of loops (each one inclosing one posterior-layer thread) attached to a basal chain, which, when dragged upon, pulls on the loops and so raises their inclosed posterior-layer strands (fig. 203). It takes the place of a heddle rod.

470. But to get each loop of this raiser, in the course of its manufacture, into its required position around its respective string, the posterior layer has to be brought forward to permit of its freer manipulation. This is effected by placing from left to right below the permanent separator a temporary one—a sharp-edged, long, thin, flat lath—under the odds and over the evens, and then turning it on its broader axis (fig. 202 *ts*). From the work which it is subsequently called upon to do, this temporary separator can also be called the presser or beater. The Wapishana call it the *taiyarribi*. The free end of a cotton yarn unwound from but still attached to its ball can now be conveniently inserted from right to left behind all

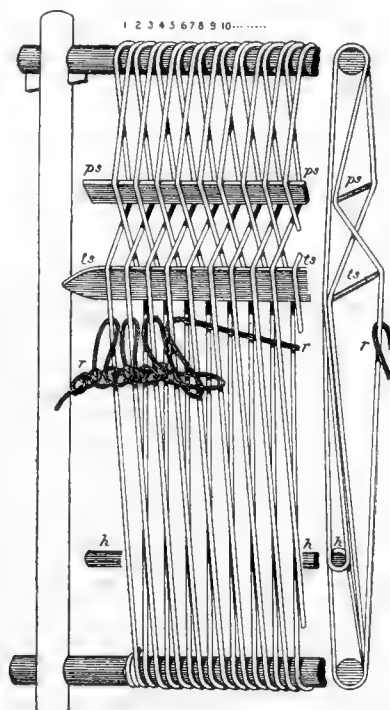


FIG. 202.—Hammock making. Frame of two horizontal timbers. The separator is inserted below the permanent one, in order to bring forward the posterior layer (of the front set) of warps, so as to get plenty of space to make the raiser.

the posterior strings and drawn forward at every interspace to help form the basal chain, progressively manufactured from left to right, the simple construction of which is shown in the diagram (fig. 203). It is finally knotted. When the temporary separator, beater, or presser is next removed, the posterior layer of strings flies back to its original position, but is now under control of the raiser, which can also be moved in a vertical direction up or down, as may be desired (fig. 204). The permanent raiser in the remaining diagrams is represented as a rod instead of a lath.

471. To make a commencement, fix on your level and make your first row of single or double chain twist according to the pattern desired (fig. 206). The technique of the double chain twist is similar to that already described (sec. 466), and that of the single one similar to its upper or lower moiety. The only difference is that but one alternate warp, instead of each adjoining two, is locked every time

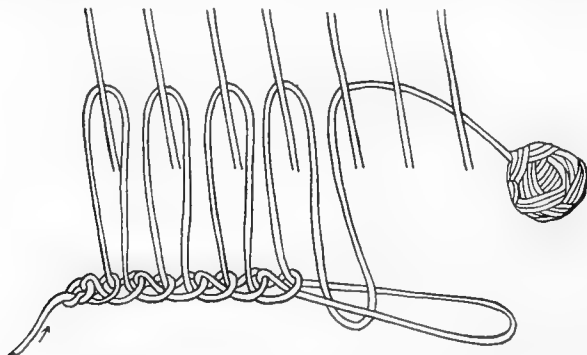


FIG. 203.—The raiser (heddle-rod) in course of manufacture around the posterior layer (of front set) of warps.

into a link of the twist (fig. 204 *et*). Once this chain twist is completed at the right extremity of the warp, it is knotted and cut. Now pull the raiser forward and, inserting the beater behind the posterior layer of warps, between it and the anterior layer, turn it on its broader axis (fig. 205 *ts*). This will now afford you the necessary space to insert your first single weft. But remember that while the chain-twist weft of this and other kinds of cotton hammock (sec. 466) are made with a short knob-headed spool (fig. 200), the plain, single wefts are here inserted on a long, thin, flat wooden shuttle (skelaribni, Wapishana) with concave ends, much after the style used in weaving an ordinary modern fish net (pl. 128 *fs*). The presser, beater, or temporary separator is next brought into requisition. This, after being slipped in between the two separated layers of (the front) warp, is made to beat and press upon the weft just manufactured, and this latter, beaten and pressed in turn downward against

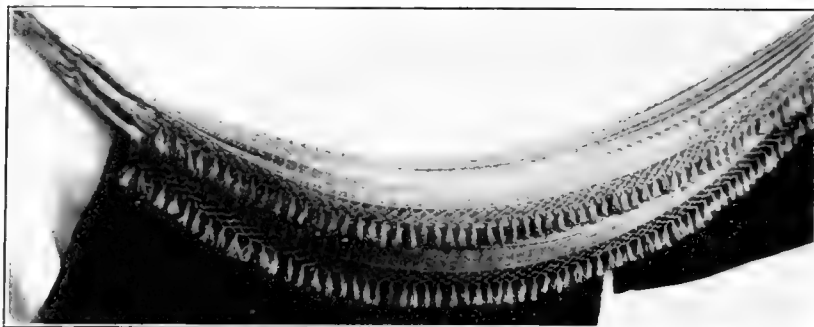


MANUFACTURE OF THE COTTON HAMMOCK. FRONT SET OF WARPS DIVIDED

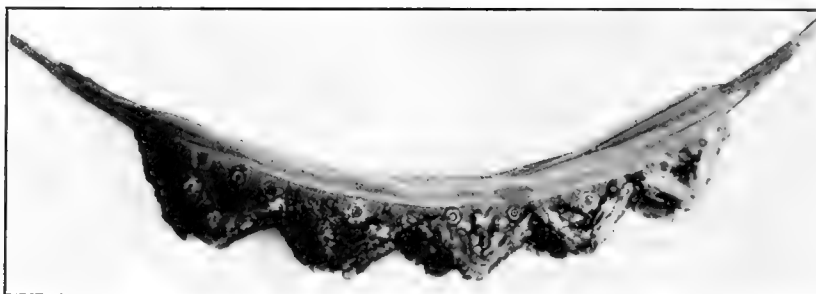
The girl in the foreground with her right hand is pulling on the raser (*r*) and so dragging forward the posterior layer (of the front set) of warps, the portion thus pulled forward being shown limited above by the tool of permanent separator (*ps*), and below by the temporary separator (*ts*). With her left hand she is helping to live the posterior from the anterior layer of the front set of warps. Below the presser there can be recognized the level (*h*) and on the back set of warps the horizontal line. Lying on the ground to her left is the flat speed (*cs*) with cotton thread attached. (From Univ. of Pa. Mus., Journal Vol. VI, No. 1.)



A, Cotton hammock without fringe. (Georgetown Museum.)



B, Cotton hammock with ornamental fringe. (Georgetown Museum.)



C, Cotton hammock with feather decoration. Made on the Brazilian-British Guiana border. (Georgetown Museum.)



D, A domestic scene. Makusi. (Photograph by Quelch and McConnell.)

PLAIN AND DECORATED HAMMOCKS

the chain twist supported by the level, is freed of any irregularity or unevenness. It is now removed (whereby the posterior layer of warps springs back, and with it the raiser) to be reinserted, on this

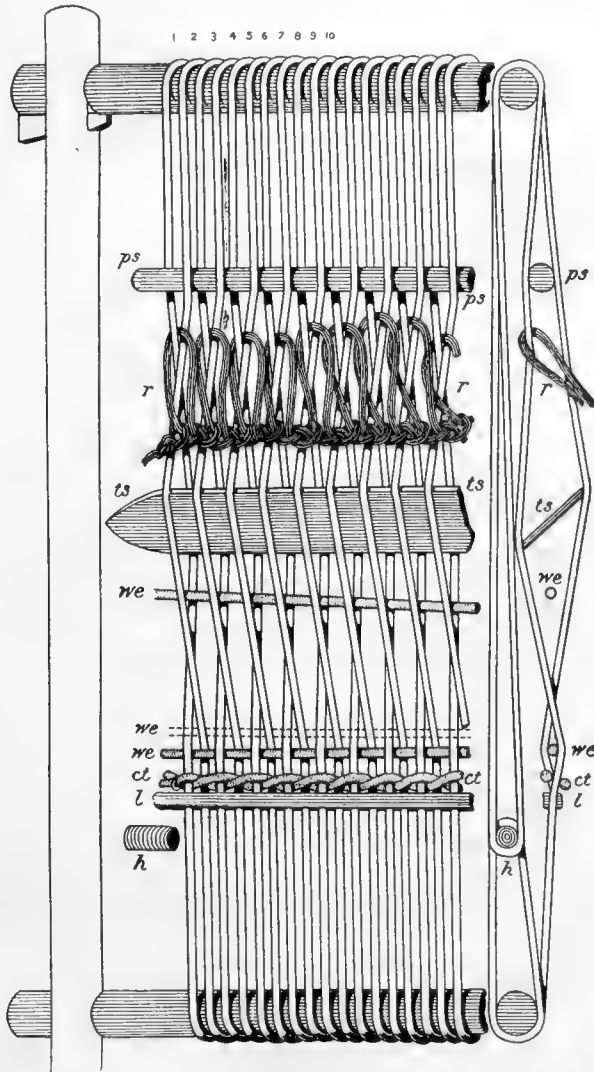


FIG. 204.—Hammock making. Frame of two horizontal timbers. The temporary separator being removed, the posterior layer of (front set of) warps resumes its original position, but is now under control of the raiser. The level is next attached and the first chain-twist made by taking up every alternate warp at a time.

occasion behind the anterior layer, between it and the posterior layer (fig. 204 *ts*), and next turned on its broad axis. There is no difficulty in its insertion, because it can be guided into position along the front and lower edge of the permanent separator. The anterior

layer of warp strands is in this manner brought to the front and the next weft inserted. The process is thus repeated—an alternation of

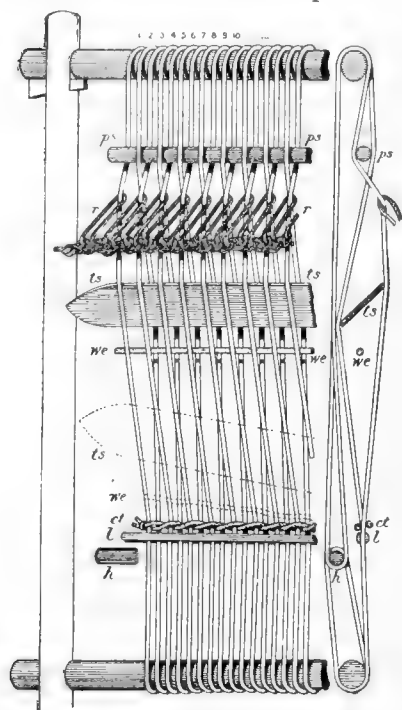


FIG. 205.—Hammock making. The raiser, on being pulled upon, drags forward the posterior layer of (front set of) warps, and in this position the temporary separator, beater, or presser, is inserted behind it.

among the Emerillon (GOE, pl. xvi, fig. 10). Tucum (*Astrocaryum*) thread can also be worked on a loom and woven into thick clothlike hammocks on principles identical with those just reviewed. Unfortunately, while Koch-Grünberg's sketches and illustrations (KG, II, 211-214) are clear in showing headpiece, raiser, level, permanent separator, and shuttles, I can not understand his statement that the hammock, upon completion, is released from the loom by a transverse cut, because the headpiece is designed for the very purpose of obviating this.

warp layer with every weft strand—until the upper cross-beam is reached. The latter is now loosened and the whole warp rolled downward on its own axis, as with an undivided front set of warps (sec. 466), care being taken that the permanent separator does not slip out of position. The final stages are carried out as before.

472. Similar apparatus and procedure is found among the Tukano and Desana (both Betoya stock), and also in the Tariana and other Arawak stocks, all of them on branches of the upper Rio Negro. Furthermore, it is found in the neighboring areas of Venezuela and Colombia. So in our own colony among the Wapishana, Maopityan, Makusi, Taruma, and others, as well as in Surinam and Cayenne, where, between the upper Maroni and Oyapock Rivers, it has been met

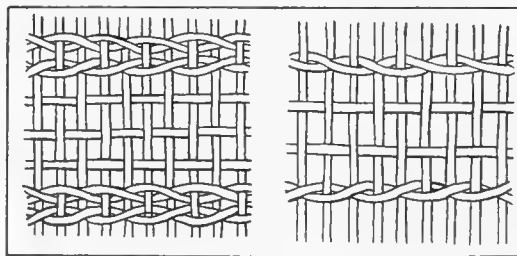


FIG. 206.—Patterns of bar (weft) in Wapishana hammocks.

473. Whereas in the cotton hammocks already described the bars (wefts) are distinct one from the other, there is another series of cotton hammocks where they are continuous. For instance, at the present time, the Atorai manufacture hammocks of from one to six wefts (fig. 207) passing forward and backward across the warp. That with three wefts is fairly common, but neither this nor the others similar to it are made for trade and barter—there is too much work in them (JO). They are all woven with the long flat shuttle (sec. 471). I am also giving the pattern with two continuous weft strands, as made by the old Makusi (fig. 207), whose men used to weave them. Jimmy, the head of Inongkong village, at the back of Toka, upper Rupununi, who had been taught by his father, worked it for me.

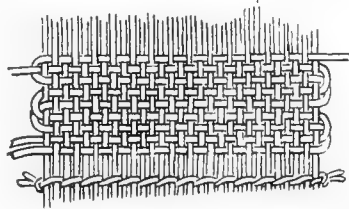


FIG. 207.—Pattern of cotton hammock made with two continuous weft strands, by Makusi males.

474. But instead of two wefts that constitute a bar running together forward and backward across the warp, continuity of bar may be effected by running each of the two wefts from opposite sides of the warp and crossing them in transit. Such cotton hammocks I saw with the Makusi on the Brazilian side of the Ireng River. They receive them in barter for beads from tribes, so they told me, living farther to the westward. Their construction, though not witnessed

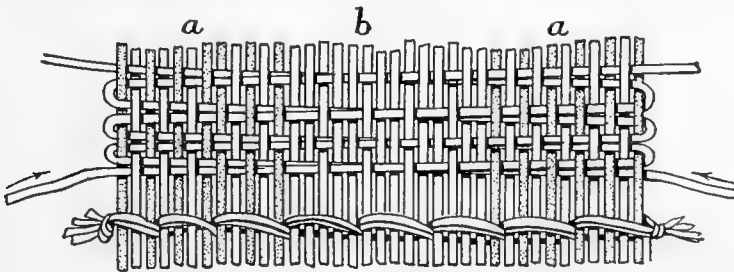


FIG. 208.—Cotton hammock made by crossing each of the two strands composing a bar (weft) from opposite sides.

by me, is shown in the diagram (fig. 208). Another peculiarity of these hammocks is noticeable in the serial arrangement of the warp strings, where the anterior and posterior layers of the front set are made up into alternate series of (a) odd and even single threads, as has been the case with the hammocks already described, and (b) single and double strings alternately. The former have furthermore been stained with a blue coloring matter.

475. There is a very interesting type of now obsolete cotton hammock formerly made by the Arawak and Carib that appears to have

had an extensive range—from Cayenne to Demerara—and was much sought after by the early colonists. It seems to me fairly conclusive that in these hammocks (*a*) the warp string was run vertically over two cross beams; (*b*) both front and back set of warp strands were interwoven together; (*c*) originally, one separate warp strand was picked up at a time; (*d*) their method of weaving survives to the present day. The reasons I have for holding this opinion are based partly on positive and partly on negative evidence. As to the latter, it seems very noteworthy that there is complete absence of any mention of special apparatus, e. g., raiser, separator, and their complicated mechanism, which even the most unobservant of travelers could hardly fail to have noticed and recorded. As to the former, this is mainly contained in the following excerpts, given in their chronological order, from Grillet and Bechamel (1698), Bancroft (1769), Stedman (1796), St. Clair (1834), and Penard (1907). The cotton hammocks of the Galibi (Carib stock) of Cayenne were woven on similar looms and on identical lines, as well in Brazil as in Guiana. . . . They have a kind of shuttle which they put through the threads (of the warp) to weave it after the manner of our cloth. But because they put their shuttle through, thread by thread, one above and the other below (each successive strand of warp), this work is extremely tedious and has need of no less patience than theirs (GB, 54–57). Their (Carib) manner of weaving (hammocks) is by winding the cotton, when spun, around two small wooden sticks of sufficient length, placed at above 7 feet distance from each other, disposing the threads singly parallel, and contiguous to each other, till they extend a sufficient width, which is usually 6 or 7 feet. The threads thus disposed serve as the warp. They then wind a quantity of cotton on a small pointed piece of wood, and begin their weaving at one end by lifting up every other thread of the warp and passing the pointed stick with the woof under it. This they do until they have gone through the whole width of the warp, and then return in the same manner, taking up those threads which they missed before, and pressing the threads close together (BA, 255). In other words, this description of Bancroft's exactly covers the procedure followed on the miniature loom used by the present-day Pomeroun district Arawak, Carib, and Warrau with which to weave certain of their cotton anklets (pl. 12), where the presser or beater, in the shape of a paddle, is used for "pressing the threads close together." Their hammocks are woven . . . being done thread after thread, traversing the warp in a manner that a hole is darned in a stocking (St, I, 397). Undoubtedly, as time went on, experience would have taught the Indian that to pass the single weft strand behind a whole row of warp threads simultaneously was more expedi-

tious than to insert it behind the warps thread by thread, and hence St. Clair's statement of half a century later becomes quite intelligible. "With the huge looms of the old-time Arawak on the Corentyn some 7 feet long and 8 or 9 wide, with similar warp, they would begin the weaving by letting off, or rather taking off, the first row of threads and passing through it a roller composed of a piece of stick with thread upon it, by way of a shuttle, which is then knocked down by a heavy piece of hardwood. This is done backward and forward until the work is finished" (StC, I, 295). "The heavy piece of hardwood" referred to here is again undoubtedly the presser. To weave these huge hammocks on such primitive lines must have required a large amount of patience and time. Indeed, the last-mentioned author goes so far as to say while some of the cleverest worked them beautifully in openwork patterns, in either way, it took months to finish one (StC, I, 295). The most recent mention of these articles is probably the following: "Hammocks with a very close texture are more lasting, but are no longer manufactured by the Kalinya (Carib) of the (Surinam) lowlands" (PEN, I, 130).

476. When the body of the cotton hammock is completed on one or other of the lines laid down in the preceding section (pl. 129 A), the projecting ends of the weft and the terminal loops of the warp may undergo certain modifications, even additions, for purposes of ornament or utility. Thus, running along the sides of the hammock may be more or less of a tassel or fringe work, etc. (pl. 129 B), on occasion even decorated with feathers¹ (pl. 129 C), while at the ends the terminal loops may be interwoven in special patterns prior to the insertion of the scale lines. It is through secondary modifications such as these that it is often possible to pronounce a correct opinion as to the local source of origin of the article.

477. Space must be found now for a description of the Warrau hammock woven from the sensoro variety (sec. 60) of its twine, known as the "purse net" from the peculiar nature of its mesh. It appears to be identical with the chinchorro of the Orinoco (sec. 459). I can recognize no classificatory relationship between it and any of the other hammocks described. On the one hand, it appears to be all warp; on the other, the weft, if such it can be called, forms both warp and shuttle. A description, however (WER, III), will probably make these points clearer. It is woven on the flat at such height from the ground as may be convenient. The frame consists

¹ Conspicuous among his treasures (the President's at Manaos) were some hammocks magnificently bordered with featherwork by Indians on the Rio Negro. The patterns represented flowers, leaves, and birds, and the colors were most gorgeous; but such was the labor connected with procuring the great variety of brilliant feathers in the first place, and that of arranging them afterwards, that the hammocks were of almost fabulous value (BL, 394).

of two parallel sticks or ropes (fig. 209 A, *a*, *b*) fixed either to up-rights in the ground or to the walls of the house, etc., the distance which separates them varying with the length of article about to be manufactured. The hammock itself, practically all warp, is composed of one continuous piece of sensoro twine, which, after being rolled up into a tight ball, is unwound into its own shuttle (*ekobo*), attached to what is, in fact, a "needle" formed of a thick piece of kuraua or its string (B, *n*). The shuttle is made of a series of clove hitches, one above the other, which are respectively slipped off the top of the "needle," according as more and more twine is brought

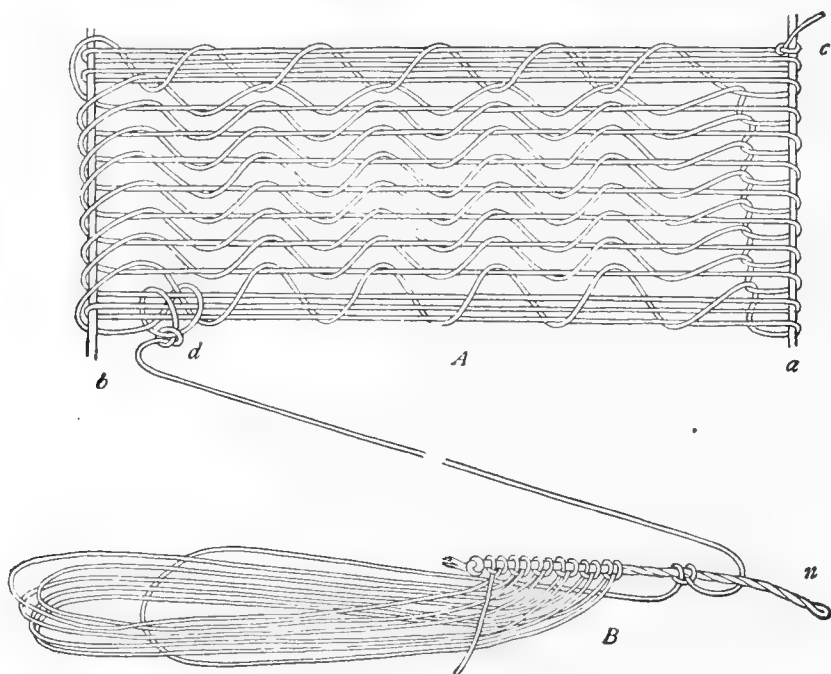


FIG. 209.—Manufacture of the ite (sensoro) hammock of the Warrau.

into requisition. A commencement is made on the extreme right, where the thread is tied on to the frame (A, *c*). From here it passes over both sticks so as to form the first four warps (constituting the hammock edge), these being next fixed in position by winding them together spirally with a varying number of coils until the left-hand stick is again reached, whence the string stretches back direct to the right-hand one. Passing now from right to left, the previous warp is locked into the coils of the spiral inclosing the hammock edge, until the left stick is reached, whence it runs again direct to the right one; leaving the latter, the thread on its return passage to the left is coiled around the two previous warps. The whole process

thus consists in arranging the warps so that those passing from left to right run direct from side to side of the frame, while those in the opposite direction coil around the two warps immediately preceding. When the desired width of hammock has been reached it is finished off by means of an edge made of four warps wound around spirally in exactly the same manner as was adopted at the commencement, and finally tied (*d*). In removing the hammock from the frame, care is taken that a scale line is immediately inserted so as to prevent the mesh coming undone.

478. Something remains to be said with regard to the coloration of the hammocks. In the now obsolete huge cotton ones of the Demerara, when the weaving was completed the hammock was stained with juice from the bark of trees so as to form various figures, which were red and ever after indelible. The trees which yielded this juice, according to information received by Bancroft, were the wallaba and red mangrove (BA, 255). In Cayenne the Galibi painted most of them red after they were made and while they were yet upon the loom, the painting being done by the men. The Brazilian women made scarcely any but white hammocks, and if they mixed either red or blue or green with the white, or all of them together—as they did frequently—they worked them with thread ready dyed, and so the men did not touch them, whereas in Guiana these beds were painted only by the men, the women leaving this work to them when they had finished the web (GB, 54–57). At Sao Gabriel, on the Rio Negro, the cords of the ite-fiber hammock, says Schomburgk, are colored blue with indigo, pink with the roots of the mirapiranka tree, yellow with the fruit of the mankaratice, ochre from the oruku (ruku) or annatto. Figures are usually worked in the hammocks, and a good workwoman can finish one in three days. They sell at Manaus and Para for about 10 or 12 milreis (ScQ, 254). In the tucum fiber hammock on the same river the weft threads may occasionally be colored—black with genipa, yellow with a decoction from certain timbers, seldom red with carayuru (KG, II, 212).

479. I propose the following tentative classification of hammocks, based on their order of structure:

A. Warp and weft distinct and separate: Weft of a series of threads, each series constituting a "bar."

a. Frame: Of two vertical posts; warp horizontal, weft vertical.

1. Each bar composed of two threads: Two warps taken up at a time (secs. 460, 461).
2. Each bar composed of four threads:
 - i. Two warps taken up at a time (sec. 462).
 - ii. One warp taken up at a time (sec. 463).
 - iii. One alternate warp taken up at a time (sec. 464).

b. Frame: Of two horizontal timbers; warp vertical, weft horizontal.

1. Front set of warps interwoven with the back set. Obsolete (sec. 475).
2. Front set of warps interwoven without division (secs. 465, 466).
3. Front set of warps interwoven after division into anterior and posterior layers:
 - i. Each bar distinct from its fellow (secs. 467-472).
 - ii. Each bar continuous with its fellow (secs. 473, 474).

B. Warp and weft continuous: One continuous thread forms a series of loops (weft) which progressively locks the warps as they are made (sec. 477).

480. When once the body of the hammock has been completed each scale line is inserted in such a manner (fig. 210 A) as to leave a number of loose loops (*sl*) at regular intervals. [For diagram-

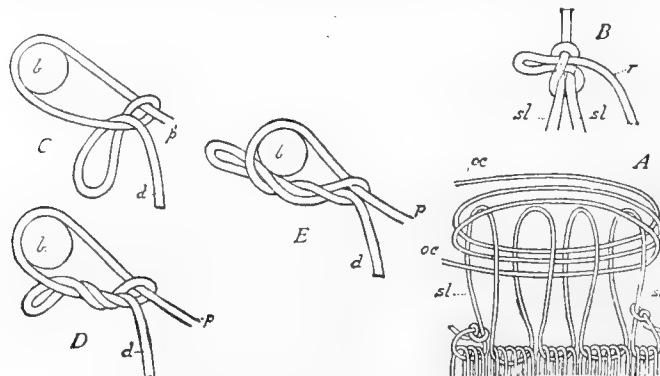


FIG. 210.—Attachment of hammock scale-lines.

matic purposes only four are shown in the figure.] These loose loops of scale line must be very nicely measured and adjusted, for only if the center one is the shortest and each successive one on either side is made longer than the one before it, so that the outermost is the longest, will the hammock hang evenly and comfortably (IT, 290). When finally adjusted, the apices of these loose loops of scale line, i. e., where they will ultimately rest on the hammock rope, are over-cast (*oc*).

481. The slinging of hammock rope (*r*) to scale line is done in a very simple manner (fig. 210 B) by means of a slip knot. The means of attachment of hammock rope to beam, rafter (*b*), etc., is also simplicity itself (C, D, E), so as to allow of a single pull to free it. While the proximal end (*p*) of the rope is dragged on to tighten it up, its distal extremity (*d*) is pulled on to loosen it.

482. For slinging hammocks in the open where suitable trees are not available, e. g., on the rocky banks of the Oyapock River, the Oyampi use a contrivance known as the pataoua (pl. 130 A). This consists of three poles tied together, tripod fashion, at the top, to which three hammocks are tied below (Cr, 156). Coudreau reports a similar apparatus from the Rio Negro. Or, again, out in the savannas, the sticks may be inserted independently of each other (pl. 129 D).

CHAPTER XX

BABY SLINGS

Preliminary (483).

The ring-sling; frame and varieties of pattern (484).

Two-and-two pattern (485-491); methods of completion (492-494); how to obviate difficulties in course of manufacture (495).

Two-and-one pattern (496-498); can be varied here and there with a few rows of the two-and-two pattern (499).

Terminals of the locking cords (500).

483. Among the Carib, Arawak, and Warrau, baby slings are made on the same pattern and lines as their respective cotton, etc., ham-

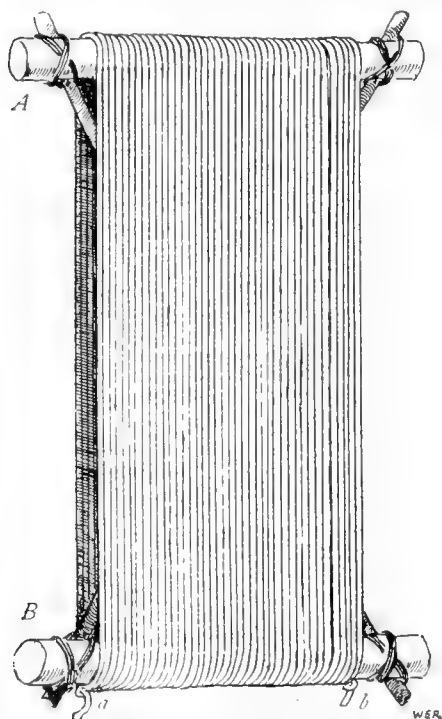
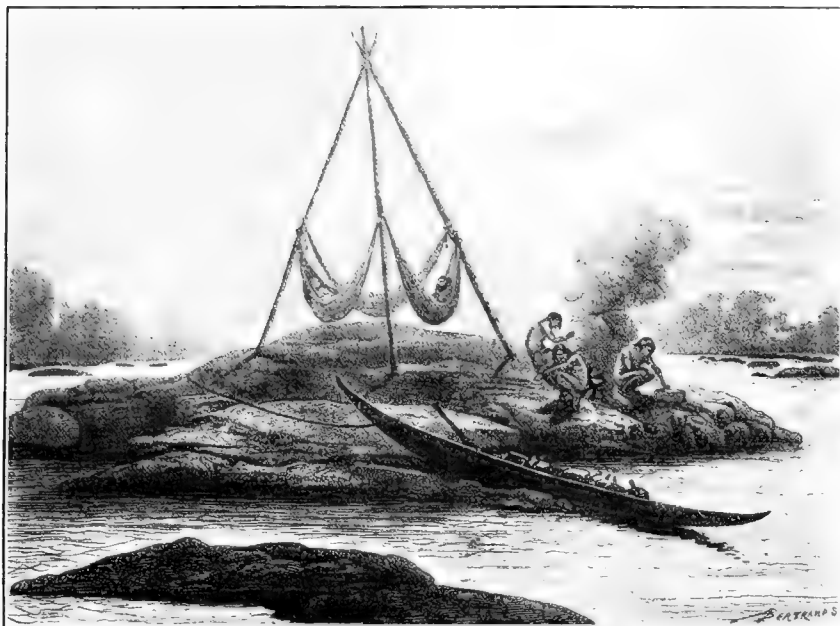


FIG. 211.—Construction of baby sling. Frame upon which the cotton strand is wound. Showing the initial (*a*) and final (*b*) knotting.

mocks, with their ends joined by a band to complete the sling, or they may be made (pl. 10 C) of two cotton bands (sec. 55) of different widths attached at their extremities. They are all worn slung over one shoulder (usually the right) and passed under the opposite armpit, the corresponding arm steadying and protecting the child supported within. But there is a specially woven baby sling, somewhat after the shape of a huge knitted napkin ring (pl. 130 B), met with among the Patamona (pl. 131 A), Makusi (pl. 131 B), Wapishana, Atorai, etc., Indians, which requires fuller notice. For want of a better term I have called this special procedure "frame looping" (sec. 56). It is made by men, but sometimes by old women, on the following lines:

484. The wooden frame (pl. 132 A, B; fig. 211), about 20 inches long, upon which the sling is manufactured, is made of two diagonals tied above and below with crossbars (pl. 133). It is held horizontally



A, Method of slinging hammocks where suitable trees are not available. Oyapock River. (After Crévaux.)



B, Makusi baby ring-sling.

HAMMOCK SCAFFOLD; BABY RING-SLING



A, Patamona at Maripai village.

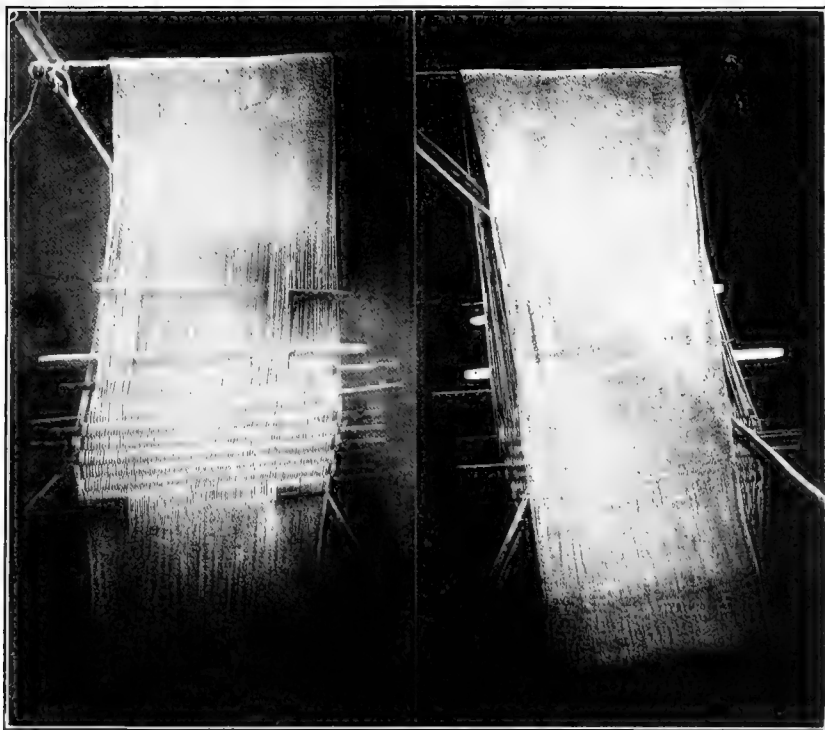


B, Makusi at Inongkong village.

PATAMONA AND MAKUSI WITH BABY RING-SLINGS

*C*

The Habba basket for storing cassava cakes. Arawak. (For description see sec. 438.)

*A**B*

A, B, Baby ring-sling in course of manufacture. Front and back views. The lowest and two uppermost mesh sticks have evidently dropped out, and been badly replaced.

THE HABBA BASKET. RING-SLINGS IN THE MAKING



A. The frame is held horizontally on a support.



B. The frame is fixed with the toes.

MAKING THE RING-SLING

Photographs by Messrs. Thulin and Liljewatsch.

on a support (A) or on the toes (B). Taking a ball of cotton, the strand is tied over both crosspieces into a knot (fig. 211 *a*) exactly below and on the left-hand side of the lower one, and is then wound from below up over the front of the frame, and back again, care being taken that though in close apposition it nowhere overlaps. It is thus wound around and around some 300 to 400 or more times, according to the taste and caprice of the maker, and as it finally comes around from the back is looped and tied (fig. 211 *b*) to the preceding thread on exactly the same level as the initial knot. The reason for these two knots being tied on the outside of the frame is to allow of the article being rolled bodily down over the frame during the course, and for the convenience of manufacture. The reason for their being on the same level will be appreciated later. Whatever the number of times the strand may be wound on the frame, there is one absolute essential, and this is that the number of strands is in multiples of four. It is only for descriptive purposes that I am supposing the sling to be now made of 40 strands, because,

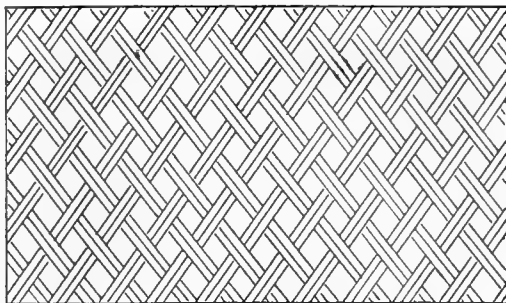


FIG. 212.—Frame looping—two-and-two mesh.

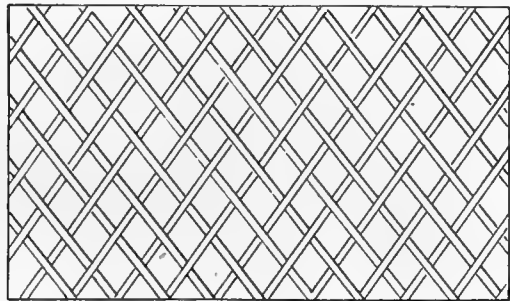


FIG. 213.—Frame looping—two-and-one mesh.

as a matter of fact, so narrow a sling resulting would be absolutely useless for carrying an infant in. Two methods of frame-looping are in vogue according as we are making the two-and-two or two-and-one pattern (figs. 212, 213). The former I have so named because it is a case of dropping and picking up a pair—i. e., two strands throughout—

whereas in the latter each pair is split so that the adjacent constituents of two contiguous pairs form the halves of one new pair (fig. 226).

485. The manufacture of the two-and-two pattern, the easier, may be described as follows: Starting from the left side (fig. 214), pick up the first pair of strands and, passing them under and to the right of the second pair, place them on your left middle finger. Pick up the third pair, and passing them under and to the right of the fourth

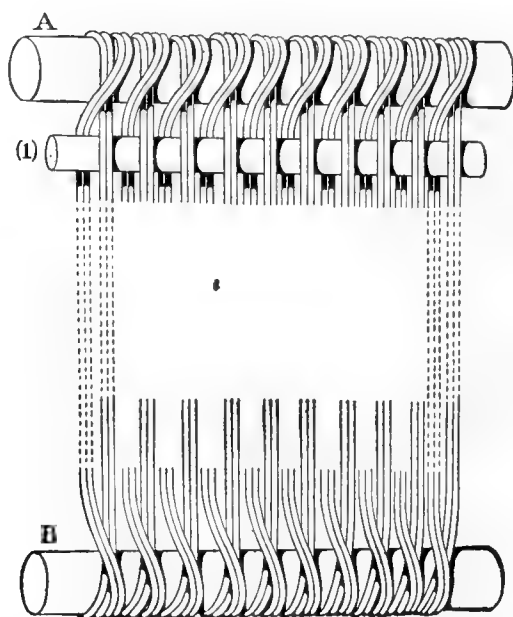


FIG. 214.—Two-and-two pattern baby sling in course of manufacture.

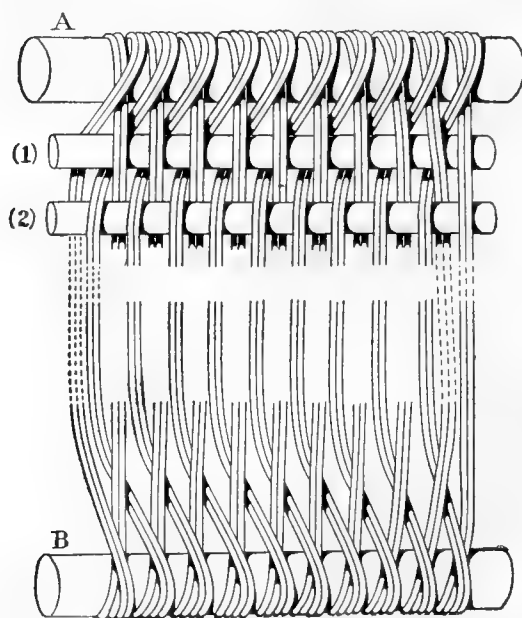


FIG. 215.—Two-and-two pattern baby sling in course of manufacture.

pair, place them on your left middle finger, and proceed thus throughout the series, the finger in question gradually moving more and more to the right to receive each successive pair of strands. On completion of the row replace the finger with a mesh stick (1), press this well down onto the row just completed so as to get it tight as well as level, and then push it up toward the top of the frame and leave it there. This mesh stick is a smooth, flat piece of kokerit longer than the width of the sling and yet shorter than the portion of upper crossbar between the diagonals of the frame. It is about one-half inch broad and one-eighth inch thick.

486. Insert left middle finger into the space already made for it by the mesh stick, but below it, thus separating a front from a back

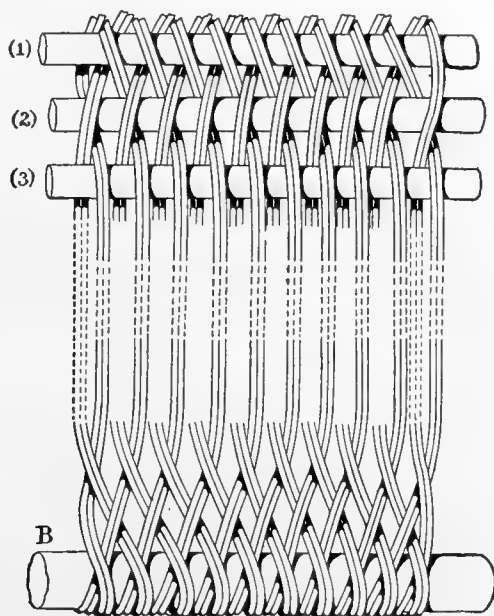


FIG. 216.—Two-and-two pattern baby sling in course of manufacture.

layer of strands, all of them in pairs. Starting from the right (fig. 215), place the first pair of front strands on the right middle finger, and, holding the second pair of front strands to the outer, i. e., right side (with right thumb and index), pick up (with left thumb and index) the first pair of back strands to the left and in front of the second pair of front strands (which is now dropped by right thumb and index) and place them on the right middle finger. Similarly, pick up the second pair of back strands and, passing it to the left and in front of the third pair of front strands, slip it onto right middle finger, which is moving more and more to the left to receive each successive pair of back strands. On completion of the row re-

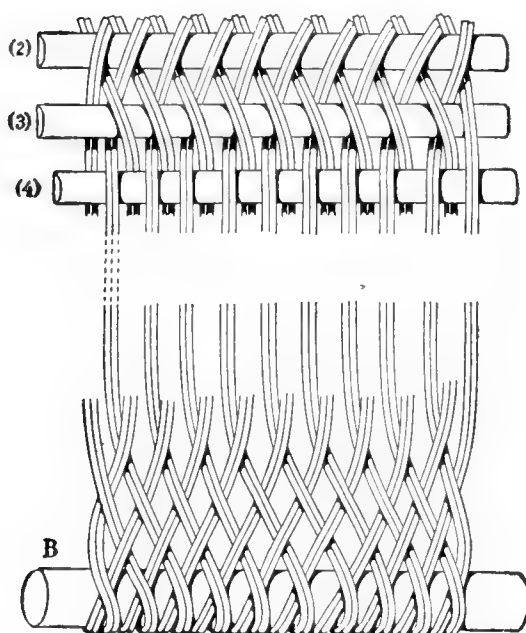


FIG. 217.—Two-and-two pattern baby sling in course of manufacture.

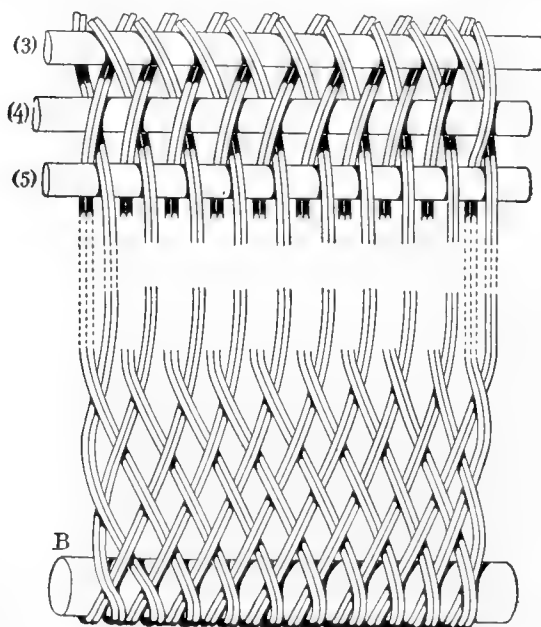


FIG. 218.—Two-and-two pattern baby sling in course of manufacture.

place the finger with a mesh stick (2) and, as before, press well down, and then up, and leave it there.

487. Insert right middle finger into the space already divided by the last stick and starting from the left (fig. 216) with exactly the same manipulations of the fingers pick up the first pair of back strands, and passing them under and to the right of the first pair of front strands place them on left middle finger. In other words, to prevent unnecessary repetition the procedure may be described shortly as: Drop two (front strands) and pick up two (back ones), taking care that the pairs aback pass to the right of the respective pairs in front and are placed on the left middle finger. Complete the row from left to right and replace the finger with a third mesh stick (3), which you will now press well down, then up, and leave there.

488. Insert left middle finger in the space already divided by the third cross stick, and, starting from the right (fig. 217), place the first pair of front strands on the right middle finger, and, holding the second pair of front strands to the outer, i. e., right, side (with right thumb and index) pick up (with left thumb and index) the first pair of back strands to the left and in front of the second pair of front strands (which is now dropped by right thumb and index) and place them on the right middle finger. Similarly, pick up the second pair of back strands and, passing it to the left and in front of the third pair of front strands, slip it onto the right middle finger, which is moving more and more to the left to receive each successive pair of back strands. On completion of the row replace the finger with the fourth mesh stick (4) as before, etc.

489. Insert right middle finger in space already separated for it by the fourth stick, and, starting from the left (fig. 218), pick up the first pair of back strands, and, passing them under and to the right of the first pair of front strands, place them on the left middle finger, i. e., drop two (front strands) and pick up two (back ones), etc. Complete the row from left to right, and replace finger with the fifth mesh stick (5), etc.

490. By this time it is probable that with the five sticks in situ the strands have become too taut to manipulate conveniently. To remedy the trouble push the topmost, i. e., first, stick firmly and gradually in between the strands right around the upper crossbar down the back as far as it will go, i. e., to a level with the two knots, and then draw it out at one or the other side. Treat the second and third mesh stick in similar fashion, always taking care to leave at least two sticks in situ pushed high up on the front of the frame. Indeed, it is absolutely essential that the mesh sticks be removed only in the order and manner indicated. On examining the lower

edge and back portion of the frame it will be observed how the mechanism involved, in rolling the sticks over and right round the

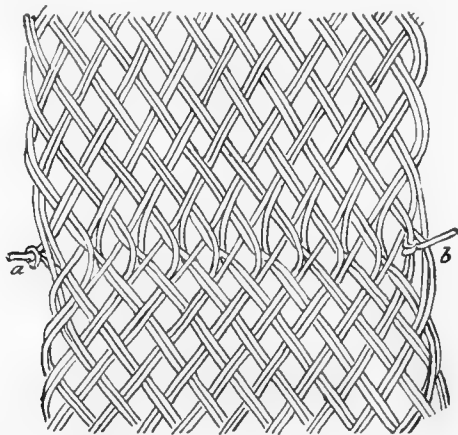


FIG. 219.—Two-and-two pattern baby sling. Correspondence between front and back at level of initial and final knots.

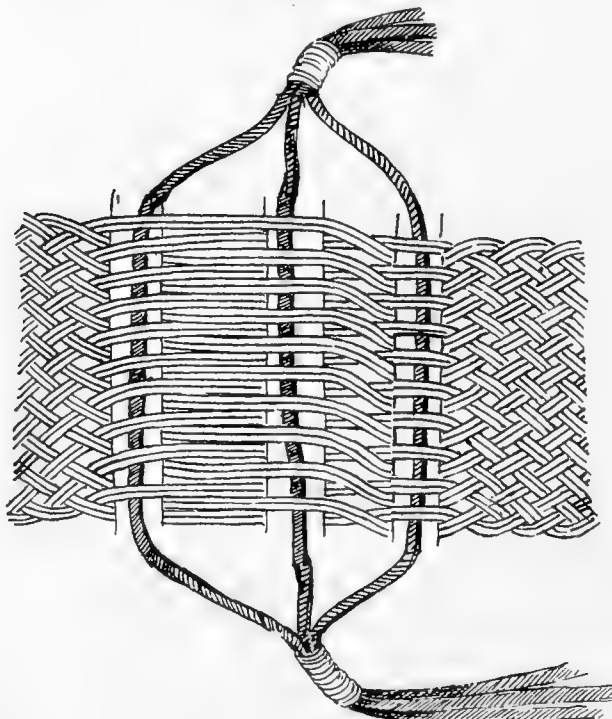
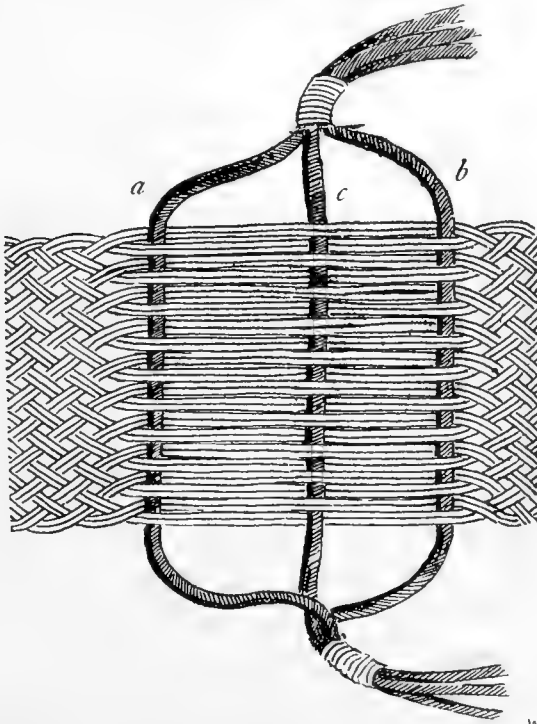


FIG. 220.—Manufacture of two-and-two pattern baby sling. The proper method of locking.

top, has resulted in the formation of an identical pattern on the back of the frame to the one in front, the identity commencing at the level of the knots. In other words, we have been working in a

circle, as it were, and as fast as each row is woven in front and a stick pushed around a corresponding row is automatically woven for us on the back. It is due to this reversal that the lines of the pattern, though identical, are reversed. This correspondence between front and back is shown in the diagram (fig. 219), where the completed article is supposed to have been removed from the frame.

491. Now work from right to left just as in section 488 and then from left to right, as in section 489, and so alternately right and left until, even with the two mesh sticks only remaining, the strands



WER

FIG. 221.—Manufacture of two-and-two pattern baby sling. A second method of locking it.

have again become too taut to manipulate properly. As a remedy, carefully loosen the upper crossbar and refix it on the diagonals about one-half inch lower, but see that no accident happens in the way of the sling slipping off during the process.

492. You will now be enabled to insert more sticks, and when there are only three remaining and you can not introduce another, replace them with three strong cotton cords (fig. 220) and tie them tightly together with kuraua close to and on either side of the completed sling, which is now ready to be taken off the frame. The object of tying in the three cords is to "lock" the woven strands, which otherwise would open and form a hopeless tangle.

493. The following is a somewhat easier method of finishing the article (fig. 221): When you decide to complete and are ready to insert your last mesh stick, replace it with two cords (*a*, *b*), which are next pushed apart, and then take a third cord (*c*), placing it between and alternately with the other two, so that when all are tied the mesh is locked. The length of these cords extends to about that of the sling, and their free extremities are decorated with tassels, etc. (sec. 500).

494. The easiest procedure of all, however, is what I have seen in some of the Makusi articles, where the final locking is effected with two cords only (fig. 222).

495. It will have been noticed that in the making of this particular baby sling with only 40 strings for purely model purposes it has

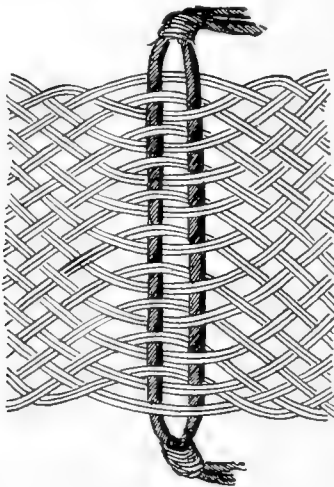


FIG. 222.—Manufacture of two-and-two pattern baby sling. The third and easiest method of locking.

been quite feasible to insert the middle finger below the mesh stick throughout its entire width. But in the real article for domestic use this would be impossible, the finger being accordingly passed only under as many strands as may be convenient, then inserting the mesh stick and withdrawing the finger. Indeed, it may possibly have to be inserted as much as three times for the completion of each row. Furthermore, it will also have been noted, as the completed rows on the front surface gradually reach the top, that the presence of the crossbar interferes with the proper working of the fingers. The cure is to roll the whole sling bodily down the frame until the portion of the article

under manipulation reaches about the center of it. To be more exact, after the front inch or two has been completed the whole sling is rolled downward until the last completed row is just above the lower crossbar and the "plaiting" continued. When rather more than a quarter of the length of the frame has been thus completed and rolled downward and the corresponding quarter automatically made by pushing the mesh sticks over the top, etc., of the frame the result will be that the whole front of the frame becomes free for further plaiting. There is therefore now no more need for passing the mesh sticks over the top crossbar, but only to push them up the front until taut.

496. To manufacture the two-and-one pattern of baby sling the preliminaries are identical with those of the two-and-two variety up

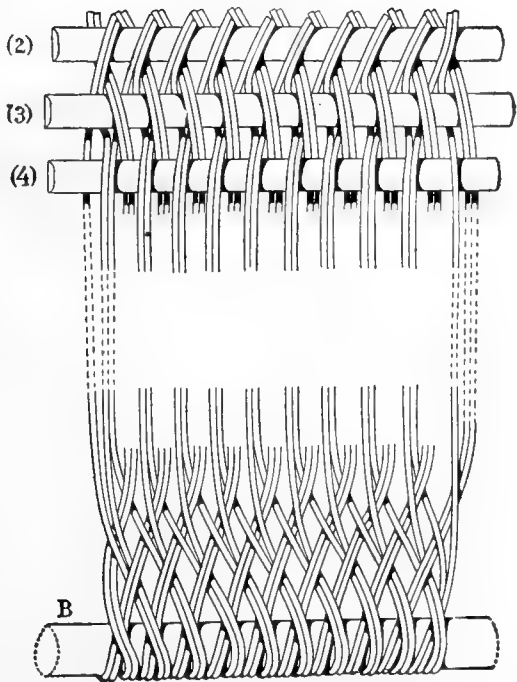


FIG. 223.—Two-and-one pattern baby sling in course of manufacture.

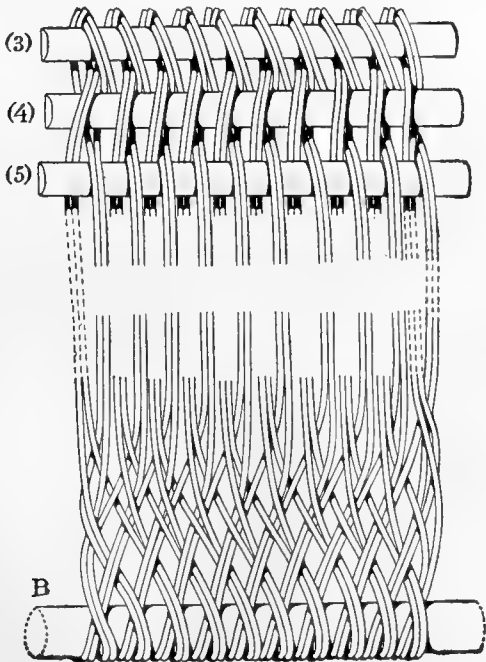


FIG. 224.—Two-and-one pattern baby sling in course of manufacture.
60160°—24—27

to and including the stage illustrated and described in section 487. Proceeding now from the right, drop two (front strands) and pick up one (back one), passing it to the left, and so onto the right middle finger (fig. 223). Now drop two and pick up two (each time splitting a pair), and so complete the series, taking care that every two from the back passes to the left of the corresponding two in front. Upon completion a single back strand will remain on the extreme left. Replace the finger with a fourth mesh stick (4) and treat it exactly as before.

497. Starting from the left, drop two, and pick up two, with similar precautions as to passing the back ones to the right of the front ones (again each time splitting a pair), and place them on left middle finger (fig. 224).

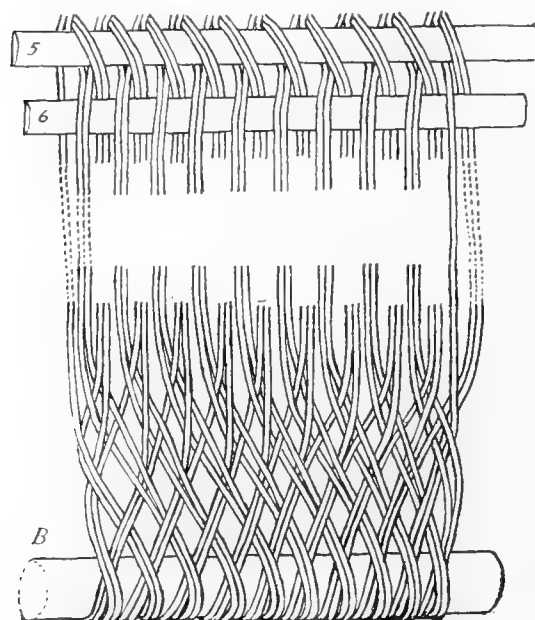


FIG. 225.—Two-and-one pattern baby sling in course of manufacture.

But as you get to the extreme right you will find one front strand and three back ones. Take up the last, i. e., extreme right back strand, and hold it temporarily (with left thumb and index) close to the single free front one. Pick up the remaining back pair (with right thumb and index) under and to the right of the pair temporarily held (which are now dropped) and place them on the left middle finger. Replace the finger with a fifth stick (5), etc.

498. For the next row work from right to left (fig. 225) as in section 496, then from left to right as in section 497, and so make row after row alternately right and left on the lines already mentioned until completed.

499. The whole sling may thus be composed entirely of one pattern, but very often it is varied here and there with two or three rows of the two-and-two pattern. This can be introduced whenever the completed stage described in section 497 is reached by starting from the right, picking up the first front pair, and then dropping two and picking up two, etc., as in section 488. Similarly, a reversal from the two-and-two to the two-and-one pattern can be effected

whenever the completed stage described in section 487 is reached by starting from the right, dropping two and picking up one, etc., as in section 496 (fig. 226).

500. As already mentioned (sec. 493), the terminals of the locking cords may be decorated with tassels, feathers, or feather down. The tassel (fig. 227 A) is made of a bundle of loosely spun single-ply cotton strands tied at their center with another one, its free end acting as the supporting string, with which it will be finally attached to the locking cord. The extremities of the bundle are now turned down and over, and again tied below so as to form a neck separating head from body (B). The strands are next carefully trimmed and cut to shape, with the ends frayed out. When completed the tassel, about $1\frac{1}{2}$ inches long, is attached to the cord in one or other of two ways. In one, the commoner, the end

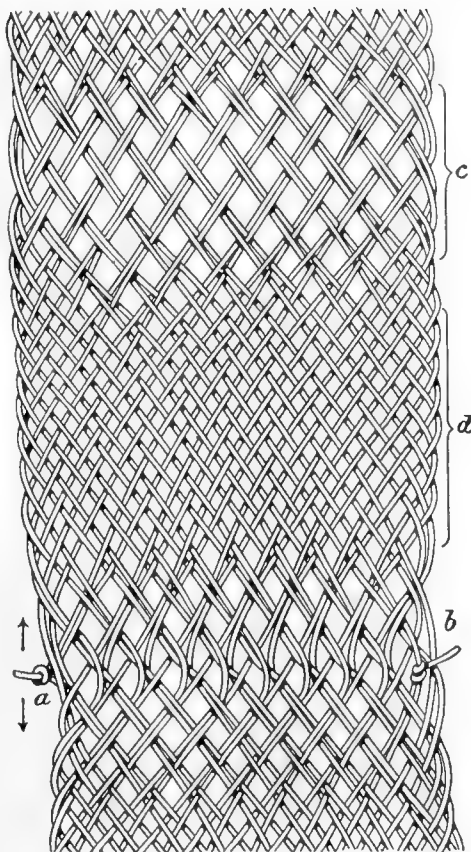


FIG. 226.—Sketch to show portion of completed sling with initial and final knots (*a*, *b*) woven in both two-and-two (*c*) and two-and-one (*d*) patterns.

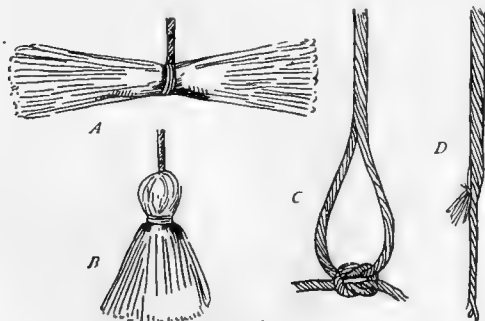


FIG. 227.—Finishing off the terminals of the locking cords.

tied in a reef knot (C). The supporting string of the tassel is then tied to one of the bundles above the knot. In the other method the ends of the cord are also separated, and all except two or three of the plies tied and cut. These two or three are rolled into a single strand (D) and the tassel tied onto it.

CHAPTER XXI

BODY DEFORMATION, DECORATION, ORNAMENTS, AND CLOTHES

Deformation: Head (501); teeth (502); lips (503); cheeks (504); nostrils (505); ears (506); sexual (507).

Depilation (508).

Tattoo: Face (509); other portions of body (510).

Body: Anointing (511); painting (512, 513); feathering (514).

Head: Hair dressing (515); cutting of the hair (516); hairpins, combs (517); coverings, dresses, decorations (518).

Feather crowns (519-527); caps (528); ornaments (529).

Forehead bands, fillets, rings (530).

Necklaces and shoulder belts: Teeth (531-533); other animal products (534); seeds and beads (535); stone and metal (536).

Neck, back, and chest ornaments (537).

Ruffs, tippets, mantles (538).

Bark shirts (539).

Armlets (540); bracelets (541); rings (542).

Belts, girdles (543-545).

Loin cloths, aprons, laps, etc. (546); bark (547); cloth, cotton, etc. (548); seeds and beads (549); miscellaneous (550).

Skirts (551).

Leg ornaments (552).

Sandals (553).

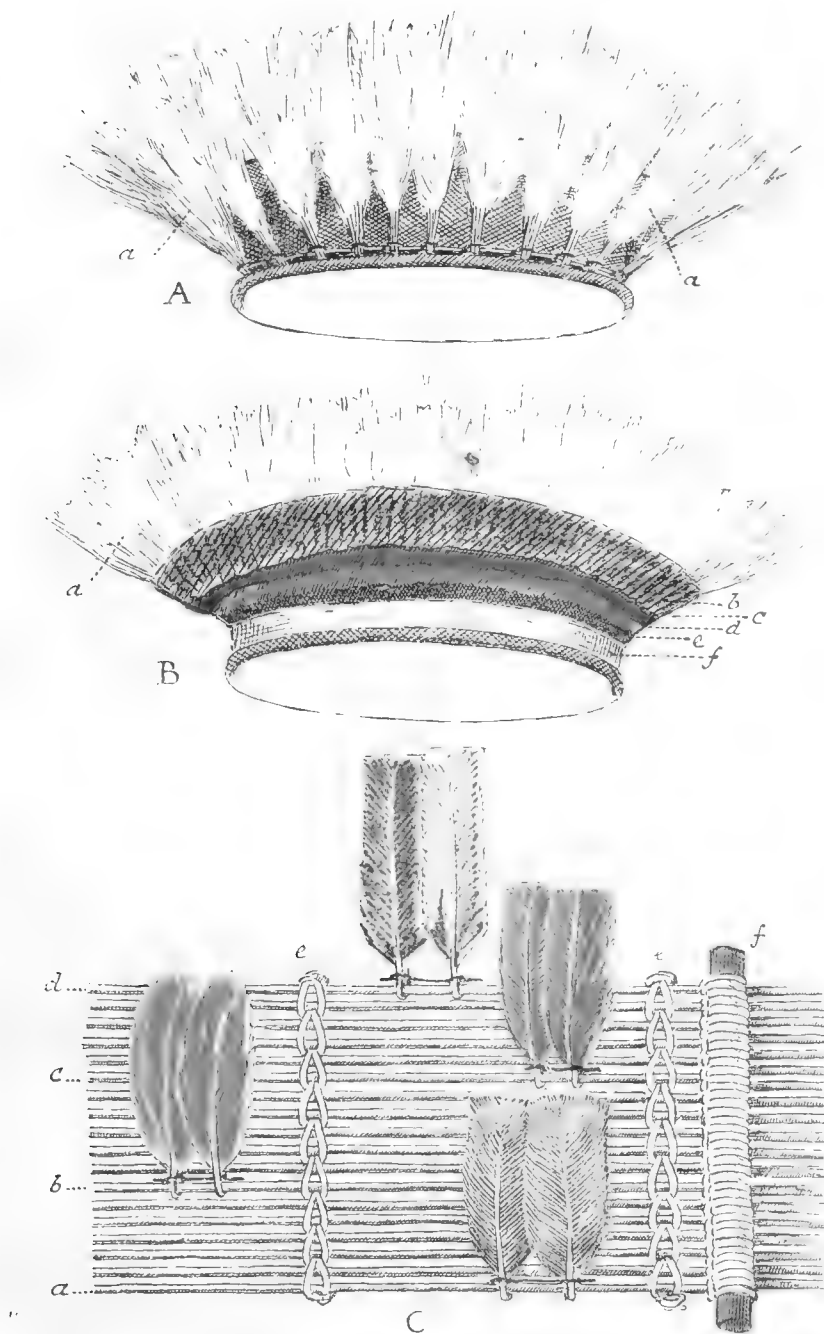
501. With the Island Carib the forehead and nose were flattened artificially (RO, 437). This was done by the mothers as soon as the infants were born, pressing the head in such a way that it sloped a little backward. Besides being considered a sign of beauty, this shape was said to assist them in shooting arrows from a tree top, in securing a foothold, etc. (RO, 552). The Fapouyranas of Cayenne also had their heads artificially flattened from front to back. This was done by the mothers with the help of small boards which they tied tightly together on their children as soon as born (PBA, 239). In Surinam, says Stedman, most of these people (Carib), esteeming a flat forehead a mark of beauty, they compress the heads of their children, it is said, immediately after birth (St, I, 398). On the upper Essequibo, beyond the Cuyuni, B. Brown talks of meeting 13 Taruma and a Maopityan or Frog-Indian (Carib), who differed from the rest, and other Guiana tribes, in the shape of his head, which was exceedingly long, narrow, and high, and had a most extraordi-

nary appearance. This form of head is a manufactured one, being produced by the application of two flat pieces of wood to the sides of the head of the infant Maopityan immediately after its birth. There the wood is firmly bound, until the head becomes flattened at the sides and, of course, heightened at the top (BB, 246). Again, among the Taruma, this same traveler speaks of seeing two more flat-headed Maopityan, a man and a woman (BB, 249). It is said that the Maopityan, who called themselves Mawakwa, were so named from the Wapishana words mao, a frog, and pityan, folk or tribe (SR, II, 472). But in connection with the mention of Taruma it is interesting to note that Schomburgk some 30 years previously had recorded a side-to-side flattening of the head among this same people, but was careful to make the statement that the deformity was not artificial (SR, II, 470-471). Outside of the Guianas, strictly speaking, the nearest people that practiced head compression would seem to have been the Agua (as they called themselves) or Omagua (as they were named by the Spaniards) of the Putumayo River. As soon as their children are born, they put them in a kind of press, forcing nature after this manner with one little board, which they hold upon the forehead, and another much larger which they put behind the head, and which serves them for a cradle; and all the rest of the body of the new-born infant is, as it were, inclosed with this piece of wood. They lay the child upon its back, and this board being bound fast to that which is upon the forehead, they make the head of the child almost as flat as one's hand (AC, 118). The name of Omaguas, in the Peruvian tongue, as well as that of Cambevas given to them by the Portuguese of Para, in the language of Brazil, signifies Flat-head; and in effect these people have the odd custom of squeezing, between two boards, the foreheads of their newborn children, to make them of this strange shape, that they may the more resemble, as they say, the full moon (LCo, 36).

502. On the Cotinga, at Fort Sao Joaquim, Schomburgk reports seeing the Portuguese stockmen's Indian women with their incisors filed to a point (SR, II, 162), while not far from the mouth of the Rupununi, on its south bank, Brown came across a small settlement of Brazilian Indians, a curious looking lot, having their teeth filed into points like those of a saw (BB, 146). I have seen many a Wapishana boy on the Upper Rupununi with his teeth filed to points, and often watched him keeping them sharpened. The same tribe extract the two upper incisors of their young girls (Cou, II, 313): the fathers are said to do this. In Cayenne the girl is said to have her teeth filed down by the piai at her puberty initiation (LAP, II, 267). Among the Guajajara Indians on the left bank of the mouth of the Amazon the upper incisors, in both sexes, are filed (*Zeitsch. f. Ethnol.*,

1912, part 1, p. 41). The Chayma, a Carib stock west (and east) of the Orinoco, were in the habit of blackening the teeth from the age of 15 with the juices of certain herbs and caustic lime (AVH, 1, 302).

503. The perforation of the lower lip seems to have been common to many members of both sexes of the Carib stock of Guianese Indians, but was not universal. Among the Barama River Carib the operation is performed with a porcupine quill or needle by the grandmother when the child begins to crawl. A piece of wood is then inserted, and occasionally twisted round and round, until the healing process is effected. Though met with among several Carib tribes in Cayenne (e. g., Galibi, Emerillon), Crévaux did not observe it among the Roucouyenne (Cr, 115). It was certainly practiced by Wapishana, an Arawak stock, in both sexes (Cou, 11, 315; SR, 11, 380). The aperture may vary from half an inch in diameter to an opening just large enough to comfortably admit one or two pins. Occasionally, in the latter cases, there may be more than one perforation. Bancroft writes how all the Akawai are distinguished by a circular hole, about one-half inch in diameter, made in the lower part of the under lip in which is inserted a piece of wood, of equal size with the hole, which is cut off externally almost even with the circumjacent skin, while the inner end presses against the roots of the fore teeth (BA, 266). In Brett's day, some 80 years later, the ornament was seldom to be seen (Br, 140). With Carib women generally, fishbones (WJ, 82-83), thorns, or other similar substances (Br, 121), with the points outward, were worn in these lip openings, before they procured pins. Males of the same stock, e. g., Makusi (SR, 1, 358), Arekuna (BW, 245; SR, 11, 208; ScF, 204) wore similar articles, while certain of them, e. g., Akawai (BB, 64), Makusi, Patamona, sported a peculiar cone or bell shaped ornament made of white bone or shell with streamers of tasseled cotton, etc., hanging over the chin (pl. 135 A, B). These "bells," however, were also worn by Wapishana (SR, 11, 42). They are cut from the naturally pierced mammillary prominences on the large conch shells found on the islands, and it would be interesting to learn how and by what routes they are brought to these far inland parts. The Makusi speak of the finished ornament as ébita. The deftness with which the pins can be placed in position is remarkable. A woman will stick one in her mouth, and in a second, only with the help of the tongue, it is inserted in the opening (WJ, 82-83). From the fact that both sexes employed spines, thorns, pins, etc., in this manner, it is very unlikely, as has been more than once suggested, that it served as a defense for the female against undesired amatory advances. [Note.—The male Mura of the lower Amazon had both lips pierced. They used to formerly wear tusks



VERTICAL FEATHER CROWN: MAKUSI, WAPISHANA, ET AL.

A, Shows the feather string (*a*) of large white eagle feathers.

B, After covering with the feather band carrying four rows of feathers (*b*, *c*, *d*, *e*) and the cotton fillet (*f*).

C, Construction of the feather band showing four strings (*a*, *b*, *c*, *d*) to which feathers are attached. For diagram purposes only two feathers are shown on each. These four strings together with 30 or 40 others are stretched like warps across two sticks (*f*), and joined by crossbars or wefts (*e*). The warps projecting beyond the sticks form tassels to hang over the wearer's back.

of the wild hog in these holes whenever they went out to encounter strangers or their enemies in war (HWB, 167).]

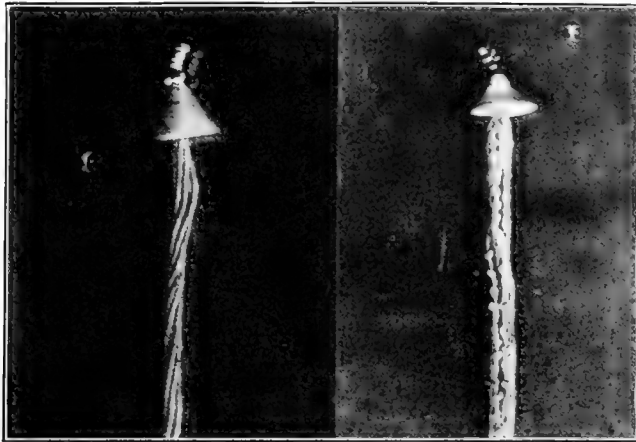
504. In Cayenne the Akoquoua had their cheeks pierced as soon as they were born. In these openings they kept parrot or other birds' feathers (pl. 135 C), which served as ornament (PBA, 15). So in Surinam, some of the Indians wore feathers through their cheeks . . . but this was but seldom (St, I, 387). In our own colony, Schomburgk mentions the Taruma as having little sticks, with feathers, pierced through the cheeks, behind the corners of the mouth (SR, II, 470).

505. Speaking of the Orinoco generally, Gumilla writes how the men also adorn their nostrils and ears with various odd ornaments, and those who can afford it with little thin plates of silver or gold, which they themselves fashion after their style (G, I, 124). The Berbice Arawak had perforated nasal septa with little silver plates (BER, 19). Brett speaks of seeing the very good features of certain Warrau women disfigured by a thin piece of silver, suspended from the cartilage of the nostril and covering the upper lip (Br, 165). Warrau, evidently of both sexes, were often to be seen with these oval plates of silver hanging from their noses (BA, 285; Bol, 151). With these people, the nose boring, like that of the ears, was done soon after birth, and the holes kept open with little bits of wood (SR, I, 167). Among other non-Carib Indians are the Wapishana, who, by means of a pin, hang therefrom a piece of metal, silver or copper (SR, II, 42), of a round shape (IT, 198), which Coudreau would regard as the ancient distinctive mark of the tribe (Cou, II, 313). As a matter of fact the Wapishana wear crescent, double crescent, circular, triangular, and half-moon shaped silver nosepieces (JO), but whether all or any of these are of indigenous manufacture (pl. 135 E, F) I am not prepared to say. Stedman says that the chiefs of families among the Surinam Indians (?Carib or Arawak) also frequently have small oval bits of silver in the cartilaginous separations of their noses, and sometimes a green or yellow colored stone (St, I, 388). Arekuna wore nose sticks of bamboo (SR, II, 208; ScF, 204); the Akawai, a piece of wood (Br, 140), which was often the size of a finger (BE, 32), or a quill (Br, 140). The Trio on festive occasions had feathers stuck in on either side (GO, 2). I have seen male Makusi with perforated nasal septa.

506. Deformation and decoration of the ears was practiced in a varying degree, but the literature on the subject is very scanty. Commencing with the Carib stock of nations, the Akawai wore a piece of wood or quill stuck through the lobe of the ear (Br, 140); the Woyawai (Waiwai) had ear pendants made of forest seeds artistically worked (Cou, II, 379); the Arekuna used long ear sticks,

very handsomely adorned with tufts of black feathers at their extremities (Br, 268), birds' heads, chiefly those of the humming bird, and a small creeper of a brilliant blue color (ScF, 204); the Oyana have gorgeous red and other feathers attached to the ear stick (GOE, pl. iii, fig. 2). A Makusi youth is described as wearing a piece of bamboo (ScF, 198), though Crévaux speaks of "certain silver triangular ear pendants like those of the British Guiana Makusi," similar to those made by the Roucouyenne (Cr, 358). I observed silver crescentic earrings (pl. 147 C) among the Arekuna, who told me they had obtained them in the course of trade from the Maiong-kong, but all these were of undoubted European manufacture.

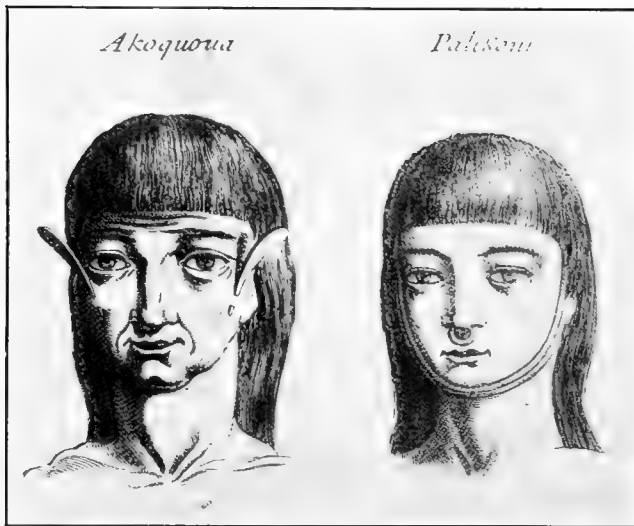
In the early days these ear pendants would seem to have been made locally by hammering the silver either in the rough or in the coin. All the pendants that I saw among these people were attached by a twine, usually beaded, to a small wooden splinter. This latter was passed through the hole and held like a toggle. Bamboo reeds, for females also (ScG, 226), and jaguar teeth are mentioned as ear ornaments for the Carib of the lower Cuyuni River (SR, I, 260). Island Carib wore caracolis (crescentic metal plates) as ear pendants (RO, 446). The piercing of the ears, nose, and underlip of these people would appear to have taken place at the same time as the naming of the child (PBR, 247). Of Arawak stock, the Guinau thrust through the ear cartilage a piece of bamboo, one end of which is ornamented with the feathers of parrots, macaws, the black powis, or, in lieu of the bamboo, they wear the tusks of the wild hog (ScF, 225). The Wapishana have their ears pierced, one individual being described as wearing a letter-wood ear stick 6 inches long (SR, II, 39). The Taruma have theirs pierced in two places—one in the usual position, in the lobe, the other toward the upper and outer edge of the organ (JO). Speaking apparently of the Caberre (also Arawak), Gumilla says that the women on days of festival were wont to put in their ears an immense tooth of a cayman (G, I, 126). This is paralleled by what Pinckard mentions having witnessed in some Indian women at Berbice who wore in their ears thick pieces of wood, of the size and shape of a wine-bottle cork, not suspended to the part, nor hanging by a ring, but pushed through a large hole cut in the substance of the ear itself (Pnk, II, 26-27). The Warrau also bored their ears, but no information is available as to the decorations worn. Ear deformation, however, appears to have been carried to an extreme on the Orinoco among the Abane or Abano females and the Guamo men. The former make a hole in the lower fleshy portion of their little daughters' ears, and gradually increase the aperture as development proceeds. The result is that when the latter is marriageable there hangs from each ear a circle of flesh which is wide



A

B

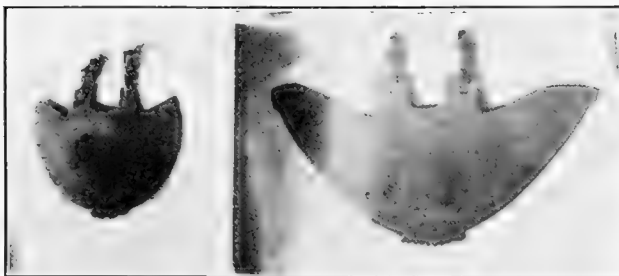
A, B, Cone or bell shaped shell lip ornaments worn by Makusi, etc.



C

D

C, D, Cayenne Indians, middle eighteenth century. C, Akoquoua showing the pierced cheeks. D, Palicour, with the tattoo passing from one ear to the other. (After Barrère.)

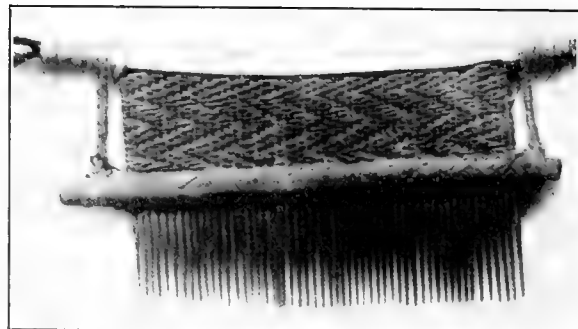
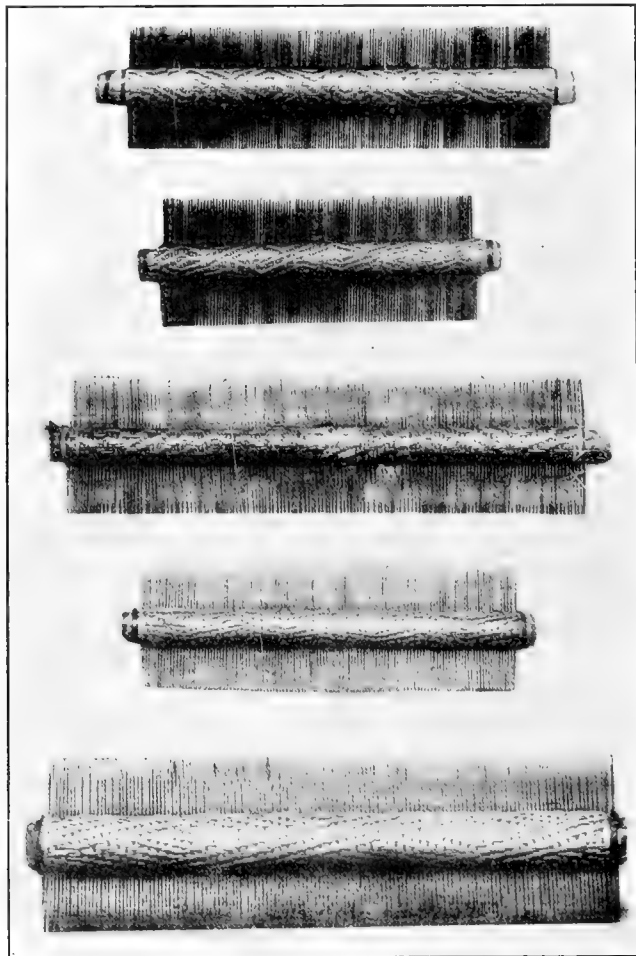


E

F

E, F, Silver nose ornaments. Makusi. The maximum diameter of the decoration is 52 mm.

LIP, CHEEK, AND NOSE ORNAMENTS



B

C

HAIR DRESS AND COMBS

- A, A Tuyuka (Betoya stock) male from upper Rio Negro. (After Koch-Grünberg.)
- B, Combs from the Vaupes and upper Rio Negro. (After Koch-Grünberg.)
- C, Comb from the Waiwai tribe. Length 104 mm. (Georgetown Museum.)

enough to admit a billiard ball, fashion demanding that these two fleshy windows should always be without a wrinkle. The perseverance with which this is attained is much to the purpose by inserting in it another circle curiously worked from the tender stem of a palm leaf (G, 1, 126). The Guamo not only slit and separate the fleshy part at the bottom of the ear, from the cartilage, in the same way as the Abano just mentioned do, but they go farther, carefully slicing and separating from the cartilage the narrow rim of flesh that is found all around the ears, leaving that flesh attached at its upper and lower ends. This is their idea of fashion, and they look on this as being particularly chic; and when, says Gumilla, I saw that their captain stuck a letter, that I had given him to carry to one of the Fathers, between this strip of flesh and the ear itself (fig. 228), and that they fitted into their ears, in the manner described, all the kickshaws that I gave them, as well as lumps of leaf tobacco, I came to the conclusion that this [slitting of the ears] was not merely a question of being *à la mode* but also served to provide them with a pocket or small wallet (G, 1, 127). Mutilations of this nature perhaps may have given rise to the stories current of the big-eared nation on the Oyapock River mentioned by Harcourt, the Marashewaccas (HR, 388).

507. Castration was known to the Carib Islanders (PBR, 225). They practiced it on their boy prisoners, who were subsequently fattened for the table (DAC, 442). On the Rio Branco certain of the tribes were said to be circumcised (ARW, 359), while on the Orinoco special attention was drawn to an analogous custom by Gumilla. Thus, the Saliva "circumcise" their little infants, boys and girls, on the eighth day, not by cutting, but by wounding them with a cruel transfixion, from the result of which some of either sex usually die. The various nations on the tributary streams of the Apure, before their conversion to the Holy Faith, were very cruel in the said custom, and extremely brutal in the ceremony by adding plenty of wounds all over the body and arms. They did not commit this butchery until the tenth or twelfth year of age in order that the innocent victims of their ignorance might have sufficient strength to withstand the loss of such a quantity of blood consequent upon the infliction of more than a couple of hundred wounds. . . . So as not to feel the sharpened point with which they pierced the flesh, they



FIG. 228.—The ear as a wallet. Sketch based on Gumilla's description.

were accustomed to make the victims (male and female) drunk beforehand, so that none should escape the cruel ordeal. Among the Guamo and Otomac the signs of "circumcision" were equally brutal (G, 1, 118). The Omaúa (Carib stock) at the sources of the Uaupes also practiced circumcision (Cou, II, 161). To become skillful with the bow and arrow, the Yaruro (Jaruri) Indians of the Orinoco submit to a sexual mutilation with a sting-ray barb which is made to pierce the prepuce (Cr, 570). Davies gives the following from the Amazon: "The man taketh a round cane as bigge as a pennie candle and two inches in length, through the which he pulls the fore-skin of his yard, tying the skinne with a piece of rinde of a tree about the bignesse of a small pack-thread, then making of it fast about his middle, hee continueth thus till hee have occasion to use him" (DW, 414).

508. The practice of pulling out the hair of the face and body seems to have been extremely common at one time among both sexes throughout the Guianas, but there are some notable exceptions. Thus, on the Orinoco, Gumilla speaks of the long beards of the Guamo, and the medium-sized ones of the Otomac (G, 1, 129). Among the Patamona on the upper Potaro, below the Kaieteur Falls, Brown came across some men who wore curious long thin beards arranged in a line on their chins like the teeth of a comb (BB, 207). Brett makes mention of three venerable Akawai patriarchs with white and long beards (Br, 425), and of members of the same tribe at Coroduni, a settlement on the Berbice, wearing small mustaches (Br, 307). On the upper Yary, Cayenne, Crévaux relates how the Indians consider the long beard of the European a most extraordinary thing. A Roucouyenne chief, who had never seen white folk, only consented to let the distinguished French traveler have a guide upon giving him some hairs out of his own whiskers (Cr, 112). Schomburgk on the Rupununi met with some Makusi, of whom only a few had retained their beards; and they seemed to be proud of their decoration (SR, 1, 365). While the eyebrows were equally commonly removed (Carib, Arawak, Makusi, Wapishana, etc.) only two recorded instances are known to me of the depilation of the eyelashes. These come from Cayenne, the reason of the practice being "to see better" (Cr, 112), and from the upper Rio Branco, among the Maïongkong and the Mauitzi (ScO, 403). The particular areas on the face whence such removal of the hair had been effected were often either painted or tattooed (Br, 343). In the depilation of the body was included that of the breast, armpits, and other parts (Pnk, 1, 518). With the Oyana, the hair on the legs and arms is sometimes partly pulled out, sometimes not at all (GO, 2). Whereas it would seem that with the Arawak and Warrau the pubic hair was removed in both sexes, this does not seem to have been the case with all the Carib;

e. g., among the Oyana there was no depilation of these parts (GO, 2), while in those comparatively rare instances where the custom was peculiar to the one sex it would appear to have been the women who practiced it. On the Berbice the instrument used for eradicating the hairs was a small piece of wood partially split. Those who intermixed with the colonists often employed a bit of wire twisted into a spiral form (Pnk, 1, 518). Elsewhere the hair, seized between the thumb and a bamboo strip, was pulled out or broken with a seesaw movement (Cr, 211). In Surinam, apparently among Carib (AK, 130), and on the Rupununi, among the Makusi (SR, 1, 365), it was extracted with two mussel shells. No adequate reason for this widely extended practice of depilation has hitherto been forthcoming. One author talks of the Indians possessing an idea that it is more becoming not to have any hairs except upon the head (Pnk, 1, 518); another, that it was connected with the idea of cleanliness (FE, 45).

509. Among the Arawak (SR, 1, 148, 151), Warrau (SR, 1, 167), and not a few of the Carib stock of tribes, both sexes

had their countenances more or less tattooed, an operation apparently performed soon after birth or in early childhood, the parts usually chosen being in proximity to the mouth and over the eyebrows, situations which, as already mentioned, were normally depilated, but occasionally other parts of the body were tattooed. With the Arawak and Warrau, as can occasionally be observed among the few very aged males and females still surviving on the Pomeeroon and Moruca, there extend from the mouth to the temples one or two curved lines something like a curled-up mustache (fig. 229 A), while from each horizontal line over the eyebrows there

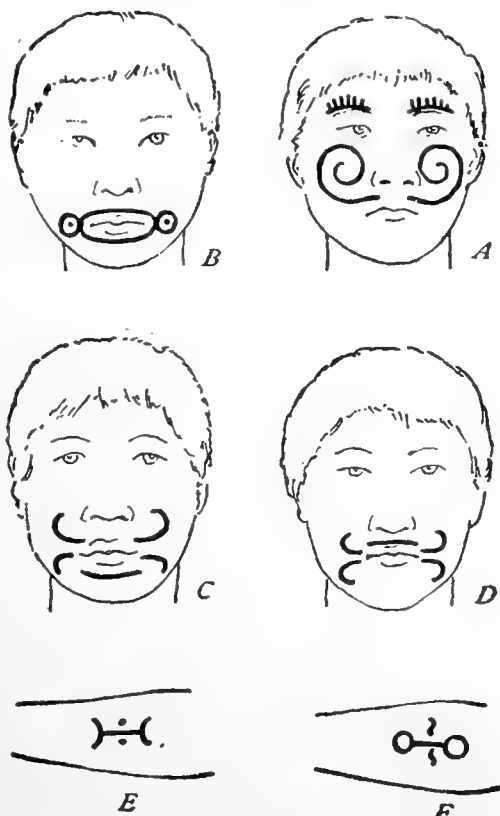


FIG. 229.—Examples of face and arm tattoo.

passes a vertical series of bars upward over the forehead (SR, I, 149, 151, 226). Among branches of Arawak stock [the Juri tattoo in a circle round the mouth (ARW, 355)], female Wapishana have many elliptical lines round the mouth (SR, II, 386), and I have seen them with a complete oval ring and circles laterally (B). The Achagua women had black mustaches "with the lines representing the hairs so turned back that when the whole space where the mustache ought to grow has been filled up, they are continued so as to cover the greater part of both cheeks, and then in a curve the lines gradually converge until their ends almost meet in the center of the chin" (G, I, 129). [A *Passé* male, with his woman tattooed in precisely the same way, had a large square blue-black patch occupying the middle of his face (HWB, 293-294).] The Carib Islanders of Guadeloupe, according to Chanca's letter, wear their hair very long, while . . . they engrave on their heads (presumably foreheads) innumerable cross-like marks and different devices, each according to his fancy, and they make these lasting marks with sharpened bamboo sticks (DAC, 443). Strange as it may seem, there is no evidence of the mainland Carib having their faces tattooed—indeed, its existence among them in Surinam (AK, 171; WJ, 72), in Demerara, etc. (ScO, 44), is denied—though there are certainly reports of its practice by members of their stock. Along the banks of the Oyapock, Cayenne, the majority of the Indians tattooed, on their faces, bars or lines which stretch from one ear to the other, the accompanying illustration (pl. 135 D) showing their passing from the situations mentioned along and below the chin (PBA, 14), for I take it that no "painting" was intended by the expression "*La plupart de ces Indiens gravent . . . sur leur visages,*" etc. At any rate, the Akawai and Arekuna undoubtedly did embellish their countenances with tattoo. I have come across old examples of the former on the Pomeroun, the pattern being identical with that observed on the Arawak and Warrau. Brown, on the Mazaruni, says all the Akawai had blue tattoo patterns at the corners of their mouths (BB, 64).

With regard to the Arekuna, both sexes had their countenances much tattooed. . . . Some of the women had the dark-blue lines traced across the upper lip and extending in wavy curves over either cheek, but the favorite style seemed to be a broad line round the mouth, so wide that each lip appeared to be an inch broader, and the aperture itself 2 inches longer than nature had made it (Br, 268). Schomburgk also records the face tattoo, from mouth corners to ears, of the Arekuna women (SR, II, 209). At the Makusi village of Maripai I saw all the women similarly tattooed with two parallel lines running outwardly at each angle of the mouth, finally curling

round, up and down, respectively, and another line below the mouth (fig. 229 C). The Patamona women may have three or four "hooks" on the edge of the mouth instead of two, and a straight line above the mouth instead of below it (D).

510. Concerning the tattoo of other portions of the body there are records of its occurrence among members of both Arawak and Carib stocks. Of the former, there are the Atorai and Wapishana with, at times, a tattoo on the arms (Cou, II, 316). I have seen Wapishana and Taurepang (Arekuna) women with a series of dots on front of, and sometimes behind, the forearms. Sometimes the Wapishana women may have a special mark (fig. 229, E, F) on the forearm. The Trio (Diau) of Carib stock tattoo the whole body like the South Sea Islanders, according to Schomburgk (SR, II, 479), but some 40 years later they only made some black marks (tattoo) on the inner portion of the arms at the level of the biceps, according to Crévaux (Cr, 280). This perhaps points to the possibility of the present-day face or arm tattoo indicating a time in the past history of the Indian when, like the Trio of Schomburgk's day, the whole body was more or less tattooed. Such a general tattoo was in fact practiced by the powerful and warlike Mundurucu on the right bank of the Amazon, between the Madeira and Tapajos Rivers. It was these same people whom Wallace believed to be the only perfectly tattooed nation in South America, the markings being extended all over the body (ARW, 359). Such an hypothesis is certainly more tenable than the explanation of one traveler that the tattoo on the arms recalls some heroic deed (Cou, II, 316), or the equally irresponsible dictum of another one that the practice . . . is used, in fact, only to produce the small distinctive tribal mark which many of them bear at the corners of their mouths, or on their arms (IT, 195-196). Indeed, at this rate, in the former case, Arawak, Warrau, and Carib—absolutely different nations—would possess identical tribal marks, while, in the latter, each Island Carib at Guadeloupe would have belonged to a different tribe. From personal inquiry among the Makusi, Patamona, and Taurepang (Arekuna), I learned that the mothers tattoo their girls on the first signs of puberty, the alleged object being to insure their becoming good cassiri brewers. The honey, with which the pigment is mixed, is believed to act as a charm or bina (WER, VI, sec. 233) to make the drink taste "sweet." Gumilla has recorded how the operation was performed by the Achagua on their little girls: With a fang (*colmillo*) of the payara (morocot) fish, which is as sharp as a lancet, they cut into the living flesh the necessary strokes by which the "mustaches" are clearly delineated. . . The little creature may scream and fly into a violent passion, but they have no pity for her. When the design is finished, they wipe

off and clean up all the blood and with an ink manufactured from a fruit that they call jagua they fill up those incisions which, after healing, retain the vivid (representation of) a mustache for life (G, I, 129). On the upper Yary, Cayenne, a fishbone soaked in the juice of the genipa was employed (Cr, 112). In the Pomeroon area the Arawak and Warrau are said to have used the spines of the "pimpler" palm (*Astrocaryum*) with the juice of the fruit of the kuruwatti (sec. 28). The present-day Makusi, Patamona, and Taurepang women use for coloring matter either rotten plantain skin or soot from the pot, mixed with honey.

511. Independently of any pigment, body anointing seems to have been practiced more or less generally throughout the Guianas. The substances most commonly used were carapa and turtle-egg oil, though occasionally copaiba gum was brought into requisition. Carapa is especially employed for the hair, though in the settled districts its place is being rapidly taken by coconut oil. The Orinoco Indians were accustomed to anoint with turtle oil twice daily throughout the year (G, I, 293), while it was the Maopityan (SR, II, 472), as well as members of his own party (ScG, 251), that Schomburgk found anointing themselves with the copaiba.

512. With very few exceptions all the nations of these countries, says Gumilla with reference to the Orinoco, anoint themselves with oil and annatto from the top of the head to the tips of the toes. Mothers, when they smear themselves, do it for their children, even those at the breast, at least twice a day, morning and evening. They next, with infinite trouble, anoint their husbands. On special occasions (e. g., a general drunk) there is additionally a large variety of sketches in different colors. Every time the husband returns from fishing or from the completion of some business his wife or daughter smears his feet afresh. It is only with extreme repugnance that either a youth or an adult will come out-of-doors unless anointed (G, I, 123). Through the use of such unguents, a shine is given to the whole body, morning and afternoon. Not only does it serve instead of clothing, but as a protection against mosquitoes. It also mitigates the heat of the sun's rays (G, I, 130). [On the other hand, the Carijona of the Yapura told Crévaux that they anointed themselves with oil and annatto in order to keep warm (Cr, 366).] The unguent certainly helps to prevent attacks of "bête-rouge" and probably chigoes. The oil employed with the annatto is that of the carapa, though among the Makusi there may be mixed up with the paint the resins of the humiria and amyris, which give a special scent to these Indians (SR, I, 365). When a general "wash" of the annatto is wanted, the Carijona pour crab oil over the palms of their hands, with which they rub the "cake"—the form in which

the pigment is preserved. The paint dissolves quickly enough in the fatty matter and it is sufficient to pass the hand over the body to make it as red as a boiled crab or an English soldier (Cr, 366). Other body paints were the bignonia and the genipa. On the Orinoco they (Caberre and many Carib) would knead up some caraña gum with the different pigments and smear the mixture upon certain delicate plaited strands, curiously diversified in tolerable patterns, and then press the colored plait work on their arms, legs, thighs, and over the whole body. The result was that, at a distance, they appeared to be clothed in a coarse striped linen (G, 1, 124). On the upper Rio Negro the Indians use an engraved roller with the genipa for printing the pattern on the body (KG, 1, 249). In the same area, a special paintbrush, made of three wooden pencils closely affixed, is employed with the bixa and bignonia (KG, 1, 174-176). On the islands, in painting their little children, they are said to have used brushes made of their hair (PBR, 248). Occasionally, the design of the pattern is previously traced on the body in black lines (PBA, 197).

513. Among the special occasions upon which the unguents, pigments, and other contents of their toilet boxes are brought into requisition for the painting of their bodies in more or less complicated patterns must be included a general drunk, a wedding, the religious services performed on the anniversary of a caciqué's or captain's death, and always on the return from a long journey (G, 1, 124), as well as upon the start of one (Cr, 112). There was one other occasion that must not be lost sight of. The Makusi mothers were said to rub the red paint (aromatic) as a ceremonial onto the heads of their children, as they were then protected from illness and from the power of evil spirits (SR, 1, 365) [see also WER, VI, sec. 240A]. It seems to have been almost the rule for the women to effect or at least to assist in the body painting for the men. On the islands, if the wife was not present to assist in the painting and combing, the husband expected others to render him this service (PBR, 240). Under circumstances of the special occasions above mentioned the general run and trend of the body painting was as follows: Arawak were painted on the face and on the arms, breast, etc., either with genipa or bixa. The women were usually the painters and delineated various figures, according to their different fancies (BA, 275). The Guinau (Arawak stock) women painted their bodies with a black dye, perhaps from the genipa (ScF, 225). The Wapishana had their whole body painted black, some of the figures exhibiting labyrinths, others grecques (ScT, 69). Warrau males had their faces alone painted in lines and terminal dots, while the females wore but two bands around the upper arm and a single one below the knee. The pigment employed was the bixa, known to them as mubosímo, which

was mixed with barahisa leaves and haiowa gum. Carib had their faces (Br, 119), their bodies, and especially the legs painted with bixa (ScG, 226). When they went to battle the women put streaks of genipa on them (FE, 45). The females had their naked bodies smeared with the red annatto, which gave them the appearance of bleeding from every pore, and as if this was not sufficiently ornamental, some of them had endeavored to improve its appearance by blue spots upon their bodies and limbs (Br, 121). Akawai painted their bodies red with the annatto or deep blue with the lana. Sometimes they would paint one side red, the other blue. The face was painted in streaks, in which performance they seemed to be very particular, as the women not infrequently spent hours at the toilet when preparing for the dance (BE, 31). On the other hand, such a decoration would not seem to have been constant, for we have the following description by Brett of some young Akawai revelers met with above the Demerara Falls: Young men and women whose bodies and limbs were marked all over with black paint in grotesque patterns, the mouth of each being favored with an especially large daub . . . A young man . . . had produced a marked effect by blackening himself all over save on the nose and cheeks (Br, 333). The so-called "black" body paint described by this and other authors must be presumably understood as being the genipa. Arekuna women had the entire body covered with annatto. The men were similarly decorated, including the hair, while the face was painted with *Bignonia* in stripes or spots (SR, II, 209). Boddam-Whetham also drew attention to their feet and knees being painted red and their faces striped (BW, 245). On the upper Rio Branco the women may have their hips decorated with figures (EU, 291). Of remaining branches of the Carib stock that require consideration there are the (Roucouyenne or) Ojana, the Oyampi, the Trio, and the Kaliña. The Roucouyenne and Oyampi of the Yary River Cayenne are represented as streaked with black and red from top to toe (Cr, 201). The former never start on a journey without staining themselves the evening before, a duty which devolves upon the women (Cr, 112). In Surinam the Trio and Ojana paint their bodies for dancing entertainments in black with genipa. The face is also on ordinary days often painted. The Trio have three colors for face painting—*tamiremui* [? *Bignonia*], dark red; *wiliko*, brown red, smelling of the crab oil with which it is mixed; and *allakoidde*, black, but, so far as de Goeje knew, the Trio and Kaliña only use bixa for rubbing into the body (GO, 2). The same author supplies many illustrations of the various face-painting designs met with among Kaliña, Trio, and Ojana, but no explanations are obtainable as to their signification, if, indeed, there is any (GO, pl. v-viii).

Face paintings of the Tukano (Betoya stock) have been described and recorded from the upper Rio Negro (KG, 1, 247). At the time of the visit paid by Columbus to Santo Domingo, when the islanders (Arawak) wished to appear full dressed, both men and women painted themselves, some black, others white and red, and different combinations of colors, in so many devices that the effect produced was very laughable (DAC, 452).

514. Body feathering.—In addition to, and simultaneous with, the painting of the body on the lines just indicated there are records under similar circumstances of body feathering. The Arawak likewise stick a great number of small, fine feathers of different colors on different parts of the body by the help of the balsam called *arrecocerra* (BA, 274). On the Orinoco, among the Caberre (Arawak stock) and many Carib, the flute players and drummers and all those who were appointed to direct the dances came out much more gorgeously, because in addition to the patterns which the sticky *carana* had left on their bodies they stuck on a variety of exquisite feathers in regular lines, white, red, and other colors (G, 1, 124). Among the Carib Islanders the most genteel of the men rubbed their body over with a sort of gum and then blew upon it the down of different birds (RO, 510). White feather down was also employed in Surinam, apparently as part of the war decoration (sec. 757). The feather down on the frontal pigment daub of the Makusi (sec. 515) must not be forgotten.

515. They [Indians generally] dress their hair with crab oil, which is of so acrid a nature that no vermin, not even the mosquito, will venture near it. Formerly they used to smear their bodies with the same oil (DF, 239). In the settled districts this crab oil for the hair would seem to be now replaced by coconut oil, of which there is no evidence, however, that the natives ever manufactured it for themselves. At the merrymakings of the Berbice River Arawak, in the very early times, the men's hair was cleverly decorated and plaited, and mingled with strings of beads, from the ends of which hung little images and plates that swung along the naked backs (BER, 23). In later times we read that Arawak women wear long hair, plaiting it and tying it in rolls on the crown of the head, and sometimes it is rolled around a silver bodkin (StC, 1, 309) or a broad silver plate, to be replaced at times by a shell, a fishbone, tiger tooth, etc. (St, 11, 189), or a wooden skewer (StC, 1, 273). That of the men is cut short by means of half a calabash or basin, which is put on their heads, and all the hair that comes below the edge is cut off with a coarse common knife, and thus formed into a regular circle (StC, 1, 309). So among the Atorai and Wapishana, both of them Arawak stocks, the males keep their hair cut straight behind in a line with the lobes of the

ears and straight across the middle of the forehead to each temple in front, letting it hang in a fringe. The women also have the fringe in front, but allow the hair to grow long behind (BB, 186). On the other hand, the women of the Guinau (also Arawak stock) cut their hair short (ScF, 225). Warrau of both sexes wore a fringe over the forehead. Behind, the men's hair was worn long so as to rest on their shoulders, while the women's was just tied with an ite string into a bunch behind the neck, the loose ends hanging down the back, though in subsequent years it was done up in two long plaits. Among the Kobena (Betoia stock) of the Uaupes River the men wore their hair long, while the women had theirs cut short (Cou, II, 161). The Tuyuka men wear "tails" (pl. 136 A). With Carib generally, both sexes parted their hair in the middle of the forehead, and in the angle produced by the parting, or rather on the hair itself, they had a thick daub of red paint. They would stick white feather down from the curassow or powis (*Crao* sp.) onto this daub (SR, I, 365). Behind, the men had it cut short, the women wearing it in a plait on top of the head. But with the Carib of the River Caris, lower Orinoco, says Humboldt, a part of the forehead is shaved, which makes it appear extremely high, and a circular tuft of hair is left near the crown of the head. This resemblance between the Carib and the monks is not the result of mission life . . . to imitate their masters, the Franciscan monks. The tribes that have preserved their wild independence between the sources of the Carony and the Rio Branco are distinguished by the same "circular tonsure of the friars," the *cerquillo de frailes* (AVH, III, 74). This is somewhat similar to what was met with at Santo Domingo when visited by Columbus, where the (Arawak) natives shaved part of their heads and on other parts grew long tufts of matted hair which gave them an indescribably ludicrous appearance (DAC, 452). In other Carib races, on the mainland, variations are also to be observed. The Arekuna near Mount Roraima had their hair cut and combed over the forehead, and the part thus "banged" was painted red (BW, 245). Appun also speaks of the hair of both sexes (as also with the Akawai) hanging full length down the back, but docked over the forehead, where it was parted in the center to form a triangle, whereon ruku and a powis feather was stuck (App, II, 272, 307). The Maionkong women, near Mount Mararaca, had their hair cut short (ScF, 237). Schomburgk, speaking of the Makusi, describes the women's hair as being plaited and wound round the top of the head, while that of the men was cut short (SR, I, 358), but makes mention elsewhere of a young Makusi wearing his hair long and tied in a tail with a long cotton string, the ends of which went round his neck and hung behind him in large tassels, ornamented with toucan skins (ScF,

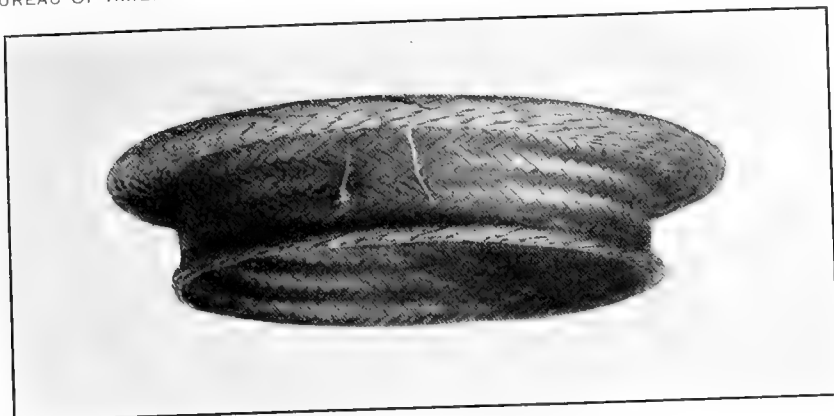
198)—an embellishment with very likely some special object, unfortunately unrecorded. An analogy for the probability of such a supposition is afforded in the fact that though the Akawai wore their hair parted down the middle (BB, 186) and to a length that admitted of its falling far below their shoulders, the "head man" had his hair bound around with cord in such a manner that it stuck out at a right angle behind (BB, 22). Furthermore, such a "tail" was common to other Carib stocks. Thus among the Trio it was the men who wore a tail bound spirally with a vine, while among the Galibi it was the women who sported it (Cr, 278). So also the Pianoghotto (SR, II, 478) and Maopityan men wore their hair in a plaited tail which lay in a 10 to 12 inch long palm-leaf tube, decorated with a number of threads and the gayest of feathers (SR, II, 470, 472). The back hair of the Waiwai and Parikuta men is similarly done up into a tube. The Serekong men had their long hair combed neatly back and here plaited into a long pigtail, which presented quite a Chinese appearance (SR, II, 253). On the islands the women (Carib) used to rub their hair with oil and tie it with cotton, to the end of which they attached small shells (PBR, 247).

516. The first cutting of the children's hair seems to have been connected with more or less ceremonial, the meaning of which appears to have been lost. The island Carib used to cut the infant's hair when about 2 years of age, for which purpose the whole family would hold a feast (RO, 554). On the mainland Arawak and Warrau at the present time crop their infant's hair as soon as it is well able to crawl; on the Pomeroon it is believed that were it to be done earlier the child would never become healthy and strong. The girls' hair was cut or burned off at puberty in many of the tribes (SR, I, 168; II, 362, 363, 431), while in several tribes—e. g., Carib, Arawak, Warrau—both widows and widowers had their hair cut short on the death of the respective spouses, a practice which in some cases also extended to the children (GO, 15) and nearest relatives (RO, 569). Crévaux has it that the deceased's spouse can not remarry until the hair has grown to a certain length (Cr, 548). Hair cutting was a sign of slavery (sec. 775). Fish teeth were among the means employed for cropping hair. Thus, on the Orinoco, the Quirrua and others who go without hair use the teeth of the guacarito for cutting it in place of scissors by fixing the jaws in place and tying the ends together with cord (G, II, 207). The sharp bamboo knife (GO, 5, etc.) was also utilized.

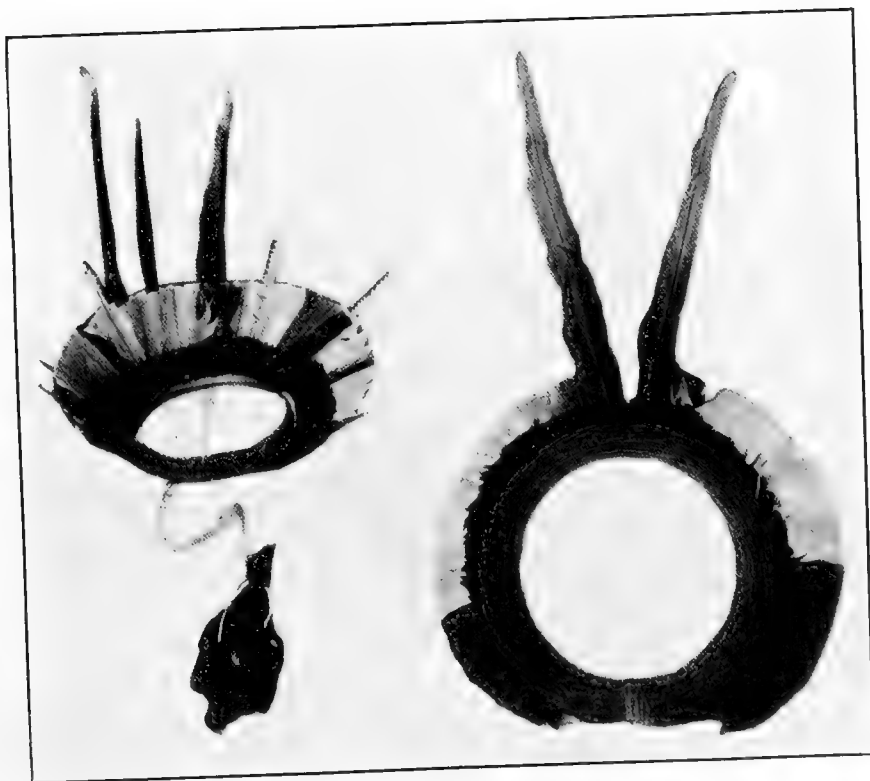
517. Hairpins, combs.—Mention has already been made of the bodkins, silver plates, fish bones, etc., with which the Arawak women were wont to fix up their hair. To all intents and purposes these may be regarded as hairpins [and it is a question whether the "combs"

made of pieces of bamboo, mentioned by Bates as securing in a knot behind the tresses of the Mandurucu women on the lower Amazon (HWB, 243) should not be included in this category]. Of what may be described as ornamental combs, though undoubtedly used as occasion requires for the riddance of lice or for the actual combing of the hair, two distinct types are met with, though both have this in common, that they are formed of palm splinters clamped between the two halves of split canes, the so-called "bars." The one belongs to the "one-bar double" group of Schmidt's classification (PS, 1085), and is seen on the Uaupes and other tributaries of the upper Rio Negro, where the bar is covered with a fine plaitwork of different designs (pl. 136 B). It is ornamented with feathers and is peculiar in that it is always worn, but by men only (ARW, 193, 343). The other (Cr, 250) belongs to the "two-bar single" group (pl. 136 C), and is found in the southern and eastern areas of the Guianas, e. g., among the Porokoto [Purigoto], Maopityan, Trio, and Roucouyenne.

518. Head coverings, dresses, and decorations.—Brett speaks of the Warrau males wearing very tall sharp-pointed caps, a natural production, the spathe of the truli palm (Br, 76). The spathe is soaked in water and then distended to the required size (CC, 49). Humboldt mentions these pointed caps at Esmeralda (AVH, II, 454). They were also worn by Arawak men and boys in the Pomeroon area, but whether for protection, ornament, or other purposes it is difficult to decide. Similar difficulties meet us in appreciating what was actually intended in the way of construction or use in the following passages: The "Pamicari" or hat of wickerwork made by the Mayangong [Maiongkong] Indians, Essequibo River (CC, 52); they [Akawai] put the captain's cap upon his head, intimating that they would yield obedience to him (BE, 202); the chief or headman [at a Makusi village on the Cotinga] wore a hat with a wide rim made of young palm leaves (BB, 275). All that it seems we can legitimately conclude from the last two extracts is that the chief's head covering was in a way distinguished from that of the others. Brett speaks of a Warrau wearing a cap made from the skin of an ocelot with the tail appending behind (Br, 170). I have seen similar cap and tail made from the hide of a howler monkey used at the Parishara dance (sec. 593). Special wicker hats may be used at special dances, as in the Uaupes River area (KG, II, 167-168). On the Orinoco, Gumilla mentions perukes (*peluca*) made of particular feathers and very delicate colors used by men when working on the plantations or on a voyage. Not only are they very gaudy ornaments, but they give protection from the sun and rain showers (G, I, 124). Elsewhere in the Guianas, in public ceremonial, "on



A, Foundation for vertical type of feather crown.

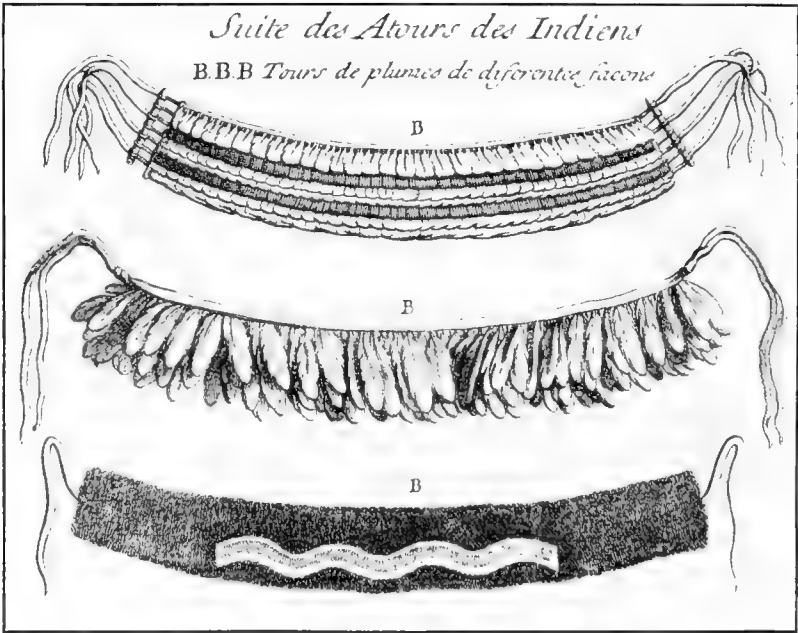


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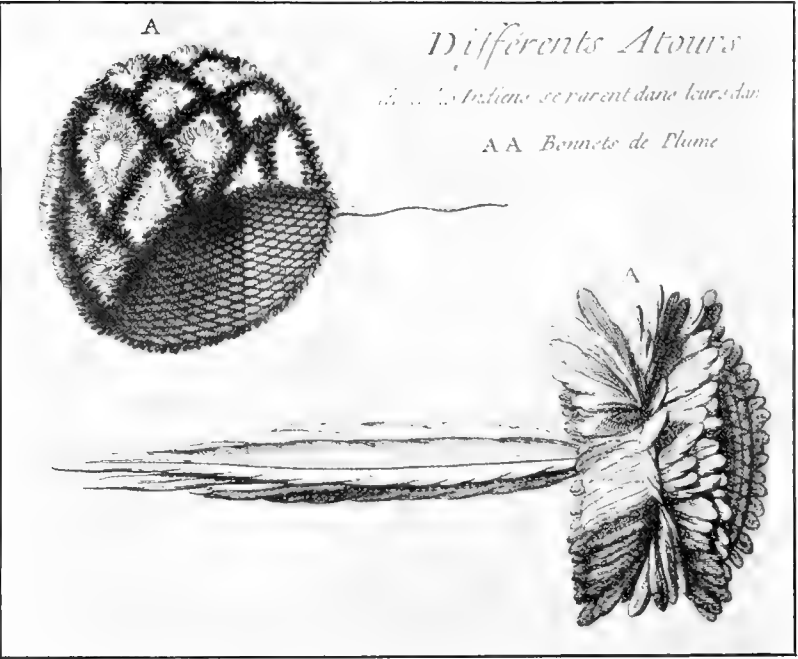
C

B, Vertical type of basketry feather crown. Wapishana. (Georgetown Museum.)
C, Horizontal type of basketry feather crown. (Georgetown Museum.)

TYPES OF FEATHER CROWN



A, Feather headdresses from Cayenne. About middle of eighteenth century. From above down, these three figures probably represent the feather band, the feather string, and the cotton fillet of the ordinary vertical feather crown. (After Barrère.)



B, Feather headdresses from Cayenne. About middle of eighteenth century. (After Barrère.)

FEATHER HEADDRESSES

festivals and other merry occasions," the men will don headdresses made of parrot and macaw feathers, tastefully arranged on coronets of basketwork, which may be held in position by a string passing under the chin. These feather crowns or coronets were of at least two kinds: In one, the frame was fixed vertically (pls. 134 A, B: 137 A, B), the feathers, with the aid of a cotton band tied behind, standing upright, while in the other (pl. 137 C) the frame (like the brim of a European hat) was placed horizontally, the feathers, inserted between its double edges, projecting in the same plane. De Goeje figures some extraordinary "compound" vertical hats from Surinam (GOE, pl. II, fig. 11; pl. III, fig. 1).

519. On examining the ordinary vertical feather-ornamented basketry crown of the Wapishana, Makusi, etc., it will be noted that the feathers themselves already fixed in rows on cotton twine (fig. 29) are woven into a cotton band (pl. 134 C), and propped up by a smaller and variously constructed cotton fillet sewn onto them in front. As often, perhaps, as not, between the band, with its attached feathers, and the crown, is laid an intermediate string of larger white feathers (eagle, etc.), forming a sort of wall against which the feather band and fillet are kept in position. This feather string is shown in situ in plate 134 A, *a*. Finally, two or three feathers are attached vertically up to the back of the hat crown. Certain matters will therefore have to be noted as regards the basketry crown itself (sec. 520), the feather string (sec. 521), the feather band (sec. 522), the cotton fillet (sec. 523), the upstanding back feathers (sec. 524), and their fixation, one to another (sec. 525), when put to use.

520. The foundation of the vertical type of crown, like that of the horizontal, shows variations in its technique, concerning which much further information is desirable. It consists practically of a ring band with projecting rim above and below (pl. 137 A), though the latter, and invariably smaller, may not necessarily be present; e. g., the lazy man will do without it. This band when woven of itiriti strands is either of the locked (fig. 41 C) or twilled one-over-and-under-three (fig. 38 D) pattern, while the rim is either of a locked type (fig. 41 E, F) or of specially constructed loops tied into position.

521. The feather string (pl. 134 A) is constructed after a manner and on lines already detailed (sec. 79), with two or three feather quills tied in each loop.

522. The feather band (pl. 134 C) will consist of some 30 or 40 cotton strings tied very carefully in close apposition, one above the other, between two sticks (*f*) stuck into the ground. Though the distance between these sticks is about 16 inches, the length of each string is between 3 and 4 feet. The lowest string (*a*) will already have had

one set of feathers cut to size (say, black) attached to it on the portion limited by the sticks, the one about the middle (*b*) with another set (say, yellow) in similar position, and the topmost string (*d*) similarly with another set (say, red and blue). Sometimes instead of three strings with feathers attached there may be four (*abcd*). Starting from below up, all these 30 to 40 strings are connected by crossbars (*e*)—some 8 to 10 or more of them between the sticks—each bar composed of four wefts of same pattern and manipulation as in the bars of the ordinary Arawak, etc., hammocks (sec. 462). The two sticks are finally cut to a length just greater than that of the width of the band, the portions of cotton twine projecting beyond them being subsequently utilized as tassels, etc., hanging down the back.

523. The cotton fillet is as a rule made in the form of a flat cord worked with four or six needles (secs. 51, 52), though it may be constructed of a single weft passing backward and forward between the warps; i. e., a band made on a loom (sec. 55). I have seen a Taruma specimen where, with a loom-made band (sec. 55), the weft passes over and under two warps at a time. In either case, the fillet is finally covered with a sort of pipe clay and its lower edge sewn with kuraua fiber to the lower edge of the feather band, thus making one piece with it.

524. The tips of the long tail feathers of the macaw, to be stuck finally into the back of the hat crown, "are sometimes clipped into fantastic shapes or are sometimes removed and replaced by tips cut from white feathers" (IT, 305). Schomburgk reports having seen the ostrich-like body feathers of the *Harpyia destructor* Temm. on the feather cap of the Wapishana (SR, II, 365), and speaks of the Woyawai (Waiwai) being especially celebrated for trapping this bird for its feathers, and so contributing to its destruction (SR, II, 389).

525. It will thus be recognized that the various constituents of the feather crown, independently of the frame, easily admit of being rolled up and so transported or cared for when not in use. When required, all one has to do is to pass the feather string just above the lower rim of the crown and tie it at the back, the upstanding feathers which press against the outer edge of the upper rim giving this head ornament its characteristic shape, and over this, to similarly tie the feather band, and lastly its attached cotton fillet. The mode of fixation of the three macaw tail feathers into the back of the hat is either direct into the meshes of the plaitwork or indirect, e. g., into two horizontally attached pencils drilled to receive them.

526. The horizontal type of feather crowns consists, as already mentioned (sec. 518), of a basketry frame (pl. 137 B, C) placed

horizontally with the feathers inserted between its double edges, projecting in the same plane. The frame really consists of two broad, flattened rings joined along their inner circumferences, but the technique of these rings varies and requires further investigation. A Warrau and Arawak pattern is represented in figure 41 E, F, where it may be identical with the upper projecting rim of the vertical type of crown.

527. How far each tribe made these feather crowns on distinctive lines either of shape, construction, material, or color there does not appear to be sufficient evidence to show. That uniformity was not invariably the rule is seen from the fact that whereas some of the Akawai wore feathers in their plaited coronets (BB, 64), there were others who, instead of feathers, sported the tail bristles of the watchima or anteaters (Da, 225). Back ornaments of the skins of toucan, cock-of-the-rock, iridescent beetle's wings, cotton "pompons," etc., may be attached to the cotton cords hanging from the back of the headdress. Tortoise-shell disks with scratchings upon them to represent the lower jaw of a certain fish are attached to the feather crowns of the Oyana of Surinam (GO, 8).

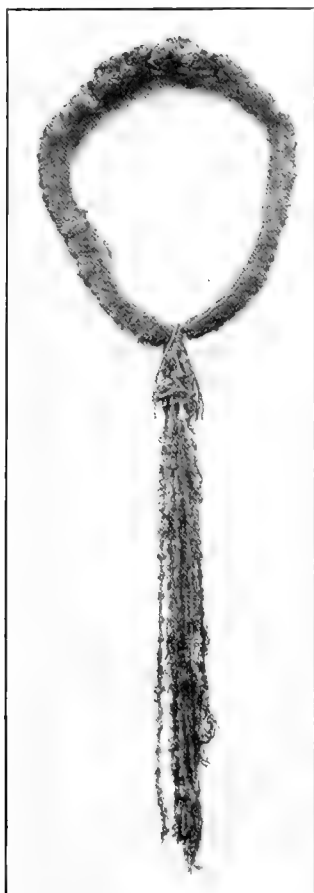
528. An unusual type of bona fide cap, on the basis of a network into the meshes of which small tufts of feather down and the finest feathers of various colors, to constitute the required pattern, are inserted, was described and figured (pl. 138 A) from Cayenne (PBA, 195). In conclusion, the following account of a "cap" taken from Columbus's visit to Santo Domingo, at that time populated by Arawak folk, may not prove uninteresting: Guacamari then made a present of . . . 500 or 600 pieces of precious stones of different colors, and a cap ornamented with similar stones, which, I think, the Indians must value very highly, because that cap was delivered with a great deal of reverence (DAC, 450). These Indians called this covering for the head, *chuco*, and it was worn in battle by the *caciques*, as a helmet.

529. The Indians of the Uaupes district, upper Rio Negro, were, and are still, noted for their many varied and beautiful feather hair ornaments, but as these have apparently but little, if any, bearing on what is met with in the ethnographical regions under present investigation, it is not necessary to make further mention of them. Excellent illustrations have already been published (KG. I, 283, 884, 325, etc.).

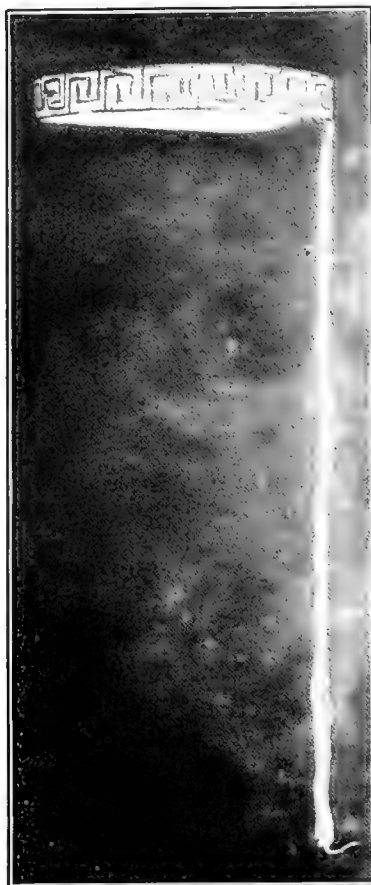
530. Forehead bands, fillets, and head rings.—Arawak males, certainly in the Pomeroon area, wore cotton tassels strung across the forehead on occasions of festivity, as well as during the period of initiation, so it is said, into the guild of medicine men. The Carib of the Barima, etc., also sport a cotton head ring (pl. 139 A). In

Cayenne, the head band (*bandeau*), made of alligator scales, was an emblem of sovereignty among the Roucouyenne (Cr, 235, 238). Though the context is none too clear, I think it may be satisfactorily claimed that the lowest of the three feather bands (pl. 138 B) figured and described as *houmari* and *caneta* in Barrère's work (PBA, 195) is really a forehead band or fillet intended to be attached to a feather hat crown. Feather fillets are also to be seen in the Uaupes district (KG, 1, 283). On "high days and holidays" the Warrau men wore a thick head ring of mauritia fiber, to which were attached, behind, long streamers of the young leaf of the same palm after its cortical layer had been removed for twine making (sec. 57). Makusi women wear a cotton overcast itiriti-strand head ring (fig. 18), from which depend behind cotton streamers with tassels and powis head feathers. They may also adorn themselves with a woven cotton band with tassels attached (pl. 139 C). Waiwai and Taruma females don a head ring made of pliable bark or wood painted in various patterns at times of merrymaking (pl. 139 B).

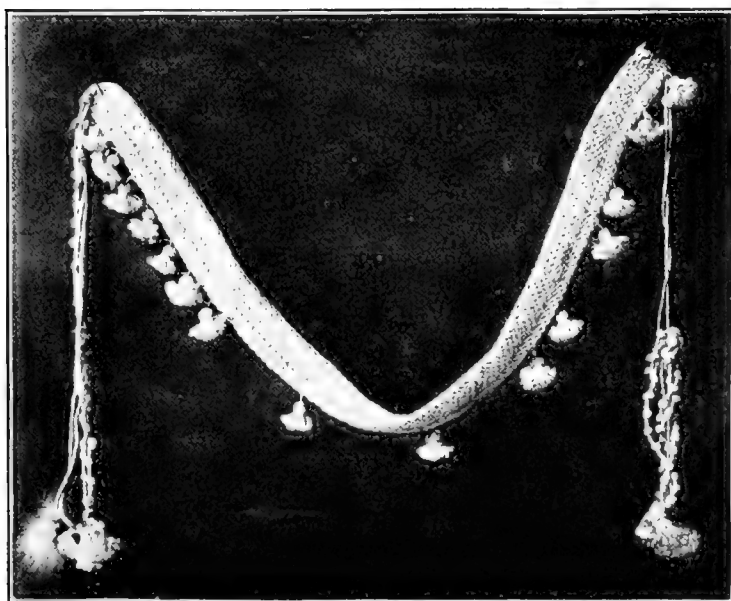
531. Necklaces and shoulder belts.—The Caberre (Arawak) and many Carib will don for "dress" purposes several threaded strings of human teeth and grinders to show how valiant they are by displaying the spoils which they brag to be from the enemies they have killed (G, 1, 124). Some of the old men (Carib Islanders) wore around their necks small bones of Arawak (PBR, 247). So also the Arawak generally wear a great quantity of necklaces, consisting of the teeth of "tigers," alligators, and wild boars (pls. 141 A; 146 B), which they have themselves killed; and these they wear as trophies of their skill and prowess in hunting (StC, 309–310). Stedman makes a similar remark of the Surinam Indians with regard to the sash of boars' or tigers' teeth worn across the shoulder as a token of their valor and activity (St, 1, 388). Arawak women and children may also sport teeth of the deer, jaguar, and water haas (pl. 141 B). Arekuna sported necklaces of monkey teeth, peccary teeth, and porcupine quills, to which were attached long cotton fringes hanging down their backs, and suspending squirrel, toucan, and various other skins (ScF, 204; SR, 11, 208–209). Such tassels of toucan skins and other bird's feathers, cotton fringes with pompons, etc., attached to a necklace of peccary teeth, were worn hanging down the back also by Akawai (CC, 53) and other Carib tribes (GOE, pl. 11, figs. 3, 9, 10), but never by the women. Arekuna women might, on the other hand, use for necklaces the incisor teeth of the agouti (pl. 147 A) and labba, or the canines of monkeys (SR, 11, 208). Makusi men arrayed themselves in belts of wild hog teeth from the tops of their shoulders, crossing the breast and back and falling on the hip on the opposite side (BE, 120). It is very common to see Makusi, Patamona,



A, Cotton fillet. Carib males. Barima River.



B, Bark headband with stained pattern Waiwai and Taruma women.

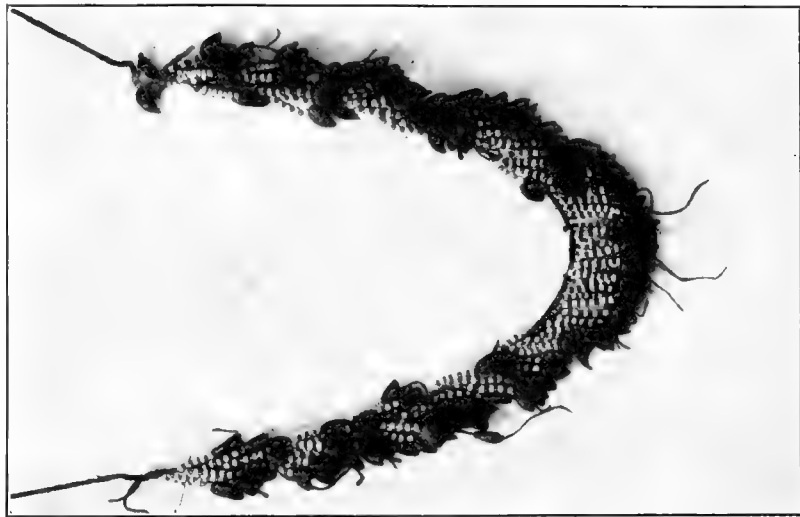


C, Cotton woven band. Makusi women. Like that of the Carib women, it may be worn both as a fillet and as a neck chain.

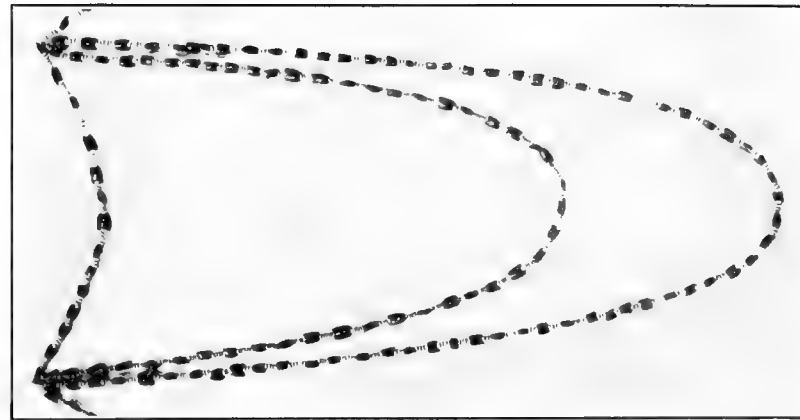
HEADBANDS



A



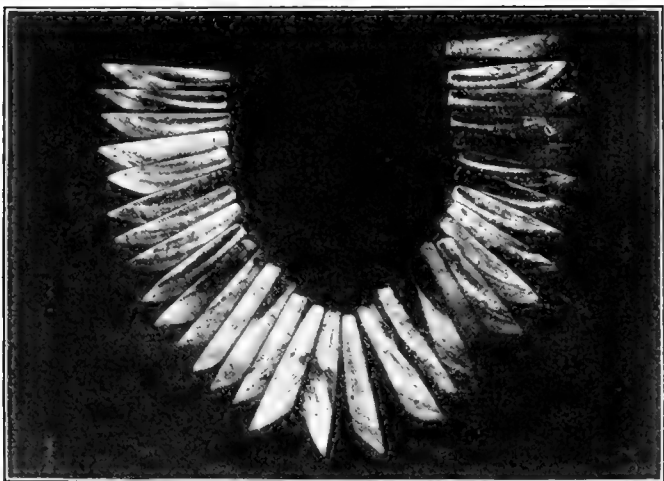
B



C

NECKLACES

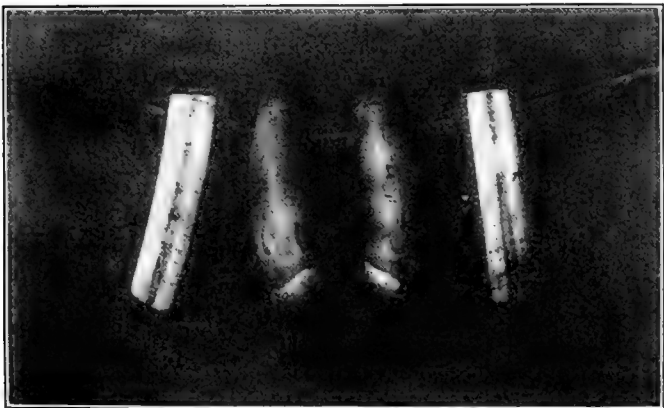
A, Patamona; seeds alone. B, Warishana; blue and white bead-stringed seeds. C, Arcuna (Tauropang); seeds and beads.



A



C



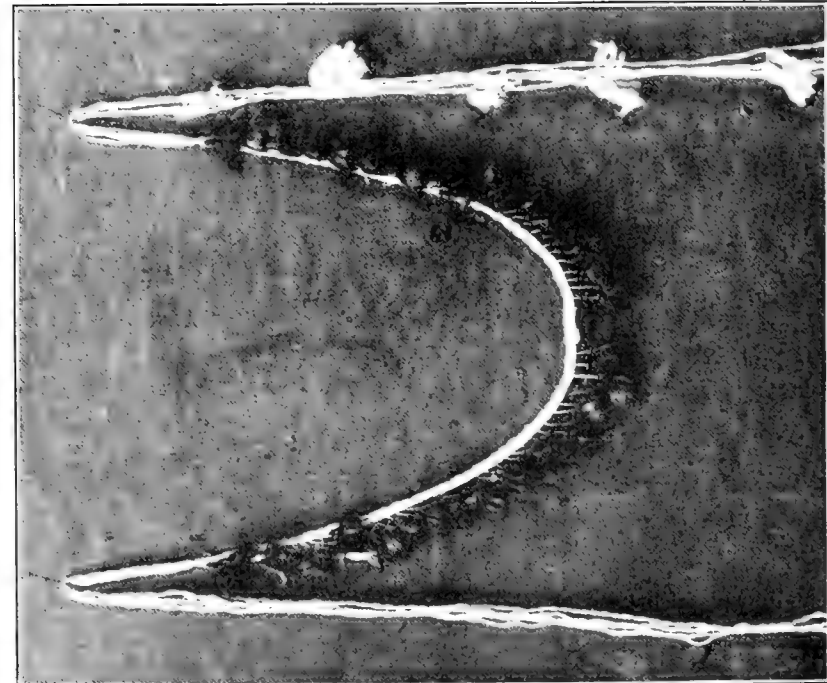
B



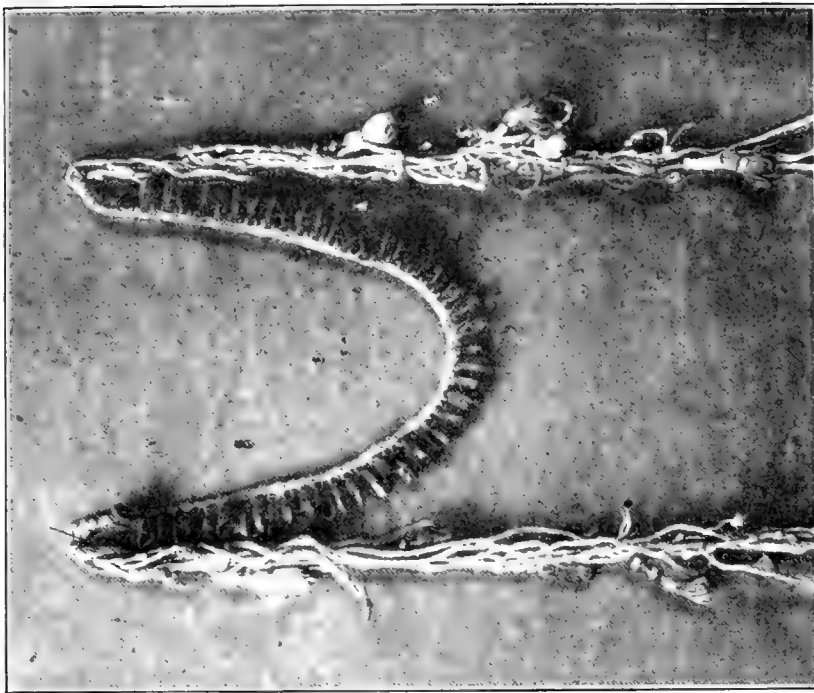
D

NECKLACES

A, Carib; bush-hog tooth. Barima River. B, Patamona; water haas and jaguar tooth. C, Arekuna (Taurepang); two kinds of seeds. D, Patamona; carved kokerit seeds.



A



B

NECKLACES

A, Makusi; seeds with cotton back ornament. B, Makusi; seeds with back ornament.



A, Wapishana; abrus seeds.



B, Wapishana: aromatic seeds as cure or preventive for cough, cold, and fever.



C, Makusi; gun caps on white beaded strings.

NECKLACES

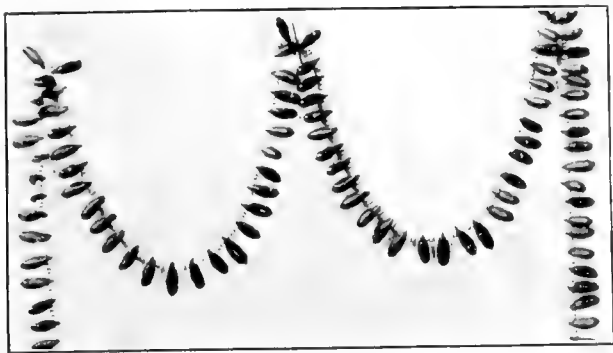


A, Patamona: bush-hog claws. Though worn as a necklace at time of purchase, I believe it is part of a hollow dance-stick.

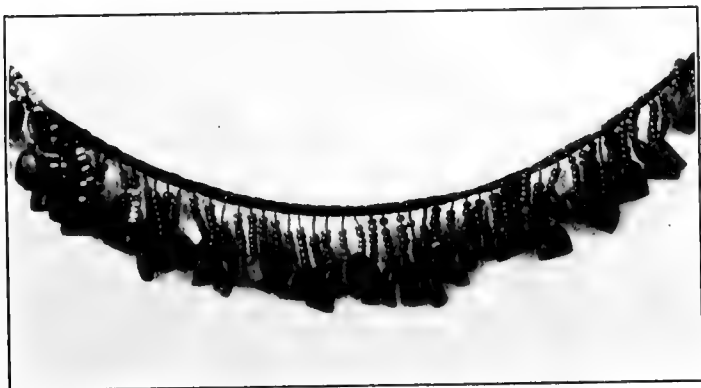


B, Wapishana: seeds.

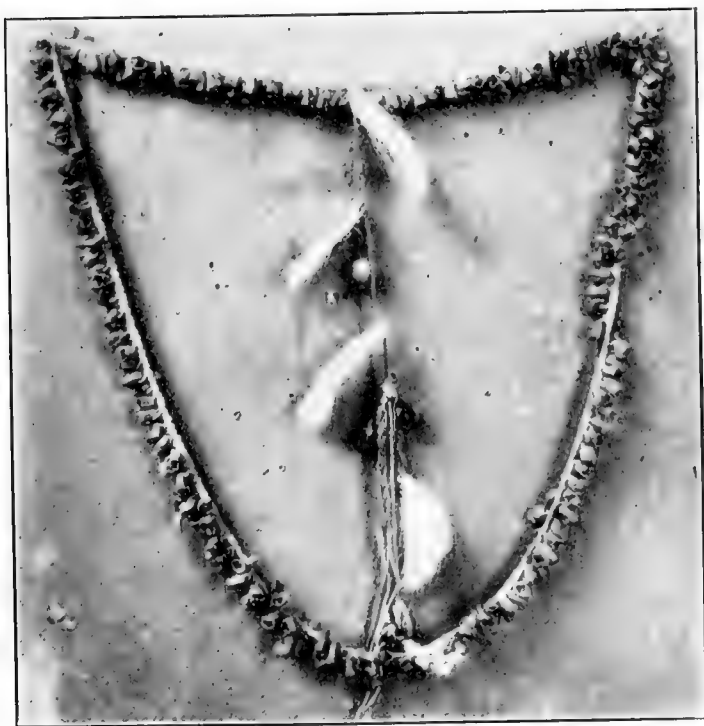
NECKLACES



A, Patamona; seeds and beads.



B, Wapishana; red, red and white, blue and white, bead-stringed seeds.

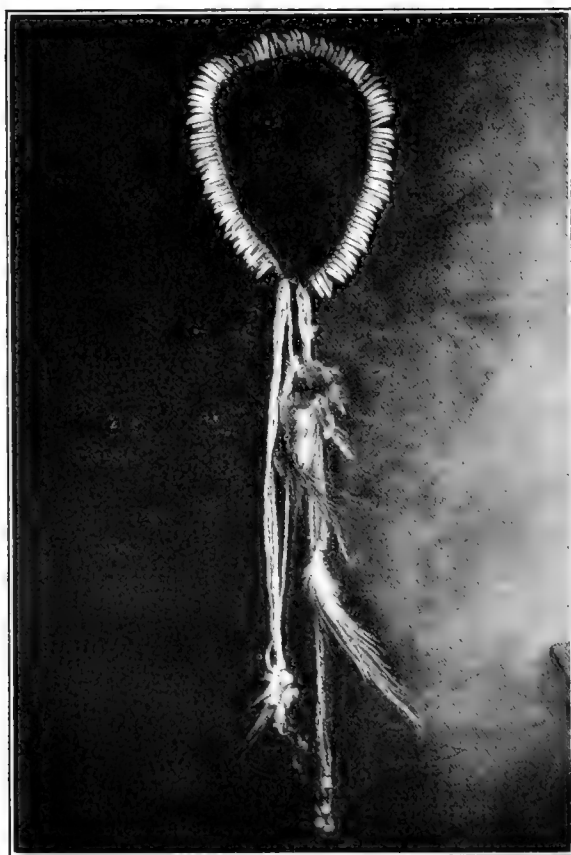


C, Wapishana; with back ornament of deer tail.

NECKLACES



A. Patamona: cotton necklace and chest ornament.



B. Carib: bush-hog tooth. Barima River.

NECKLACES

and Arekuna women, young men, and boys wearing acouri tooth necklaces. Of unusual composition is a necklace, from the Essequibo or Pomeroon Rivers, described as made from the teeth of the byarri (? biara), a species of fish (CC, 47).

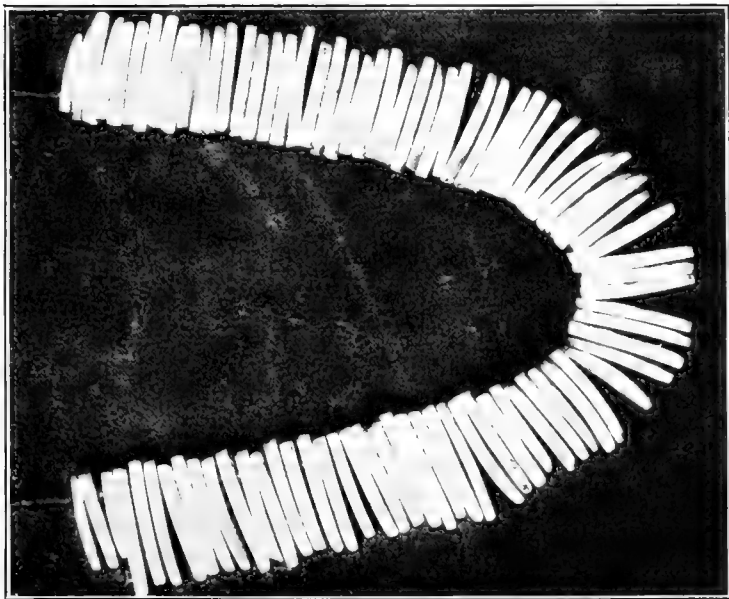
532. In the case of women and children certain of the above necklaces would seem to possess properties independent of, or additional to, their purely decorative value (sec. 535). Thus Atorai and Wapishana parents will tie hogs' teeth round their children's necks as an infallible method for making good huntsmen of them (Cbu, II, 315). Makusi women and children wear around their necks jaguar teeth, to which they ascribe talismanic power (ScT, 61). Surinam Carib children wear for preference jaguar teeth, which bring them under the protection of the spirit of that animal (PEN, I, 96). On the Uaupes River the necklaces made of bush hog and jaguar teeth, worn by little children, are intended to preserve them when they grow up from being attacked by wild beasts (Cou, II, 171). Wapishana women wear certain aromatic seeds (pl. 143 B) as a cure or preventive for coughs, colds, and fevers. A tapir hoof might be hung on the neck as a remedy for fits (sec. 928). I have elsewhere (WER, VI, secs. 239, 240) discussed the talismanic virtues of certain of the neck and wrist ornaments.

533. As regards the components of the tooth necklaces it seems that in the case of the bush hog, only the two upper canines are used, and as some of these articles contain about a couple of hundred (pl. 146 B), the labor entailed in their acquisition must be enormous. More than this, in addition to the piercing, each tooth is ground down until its four sides are square (pl. 141 A), and the top ground to a point. On the other hand, teeth of acouri, cayman, jaguar, and water haas are just pierced and strung (pl. 141 B). Unfortunately, there is no evidence forthcoming as to the manner in which, previous to the introduction of European tools, these teeth were drilled.

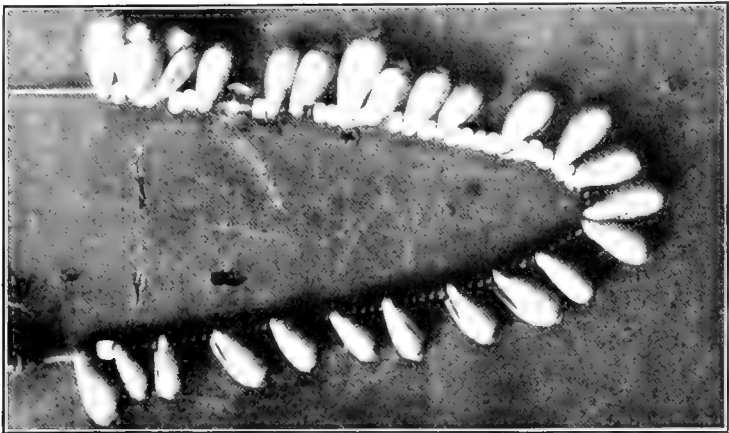
534. The Arawak of the Demerara employed the spines of the porcupine (*Cercolabes prehensilis*) as necklaces and other decorations (SR, II, 499). The Arekuna used similar ornaments (ScF, 204; SR, II, 208-209). I have seen Patamona using bush-hog claws (pl. 144 A). Among other units of animal origin still to be mentioned as entering into the composition of necklaces are bugles manufactured out of fish teeth (Bol, 145; BA, 257), beads made of snail shell (G, I, 125), and (?) cones (*quilles*) made of other shell (PBA, 196) (pl. 147 B).

535. As a general rule women will load themselves with astonishing quantities of seeds and European beads in great ropes around the neck, across the shoulders, around the waist, arms, wrists, calves, and ankles. The most prominent ornament of the Berbice Arawak

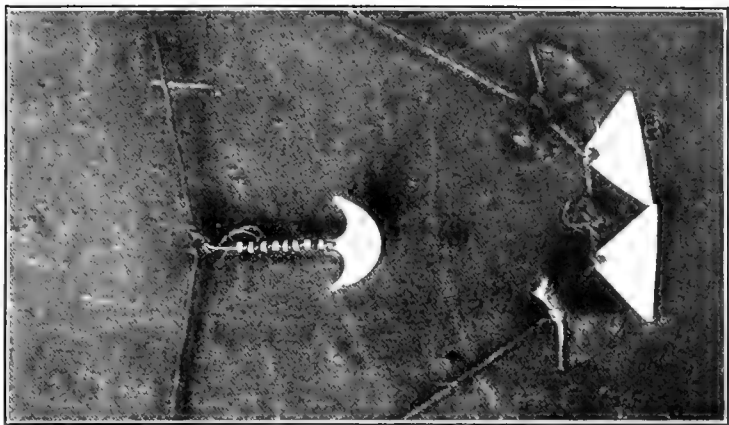
female, according to Van Berkel, consisted of *orewebbe*, a certain kind of bone which is ground down flat to about the thickness of a florin and the circumference of a penny. I have seen, reports this author, women or lassies who I believe have had 15 to 18 pounds of these little bones around their necks. Likewise in their ears they wear short bunches of them to which copper plates are fastened at their extremities, though these are within a third as great and thin in comparison (BER, 20). With regard to stringed European beads, certain tribes would seem to have had a special predilection for particular colors; e. g., Makusi, blue and white. From both sides, under the arms, after the manner of bandoliers, the Berbice Arawak would sling sundry sorts of stringed beads whereof the green and yellow are held in the highest estimation; a bunch of 12 to 16 strings is sufficient to gain the finest woman's favors. They also wear these bead ornaments wound around their arms in three places, to wit, on the wrist, above the elbows, and on the shoulders (BER, 20). On the other hand, Surinam Carib men, just as much as women, wear around their neck long threads of blood-red, blue, and brown beads (*karoebe*), but never green or yellow. Especially are certain brown-red beads with blue at the openings, the so-called boka [Spanish *boca*, mouth], very highly prized, as also are strings of *arowepi*, extremely small, dark little beads which look red when new, or are made from the bones of the krarin (sawfish) or, it has been alleged, out of the bones of soldiers killed by the bush negroes. These are called wit-[i. e., white]-arowepi, but they are no longer manufactured (PEN, I, 95). [I am very suspicious that the above articles *orewebbe*, *karoebe*, and *arowepi*, are really not made from bone but from the large fresh-water snail known as *kerreketti* to the British Guiana Creoles and *uruabi* to the Carib, Akawai, etc., the shell of which is ground down to form various articles, e. g., the button at the back of their cotton armlets (sec. 540). Compare also the terms "ouabe" and "ouayary" that immediately follow.] The seed necklaces of the Roucouyenne, Trio, etc., are made by threading drilled chips from the capsule of the *Omphalea diandra* seed . . . the Roucouyenne call these necklaces *taïrou*, the Cayenne Creoles *ouabé*, and the Trio *avourou*. The Roucouyenne also make a kind of necklace called *ouayary*, which the Creoles know as *chéri-chéri*. These are conical seeds broken in two, ground into shape, and threaded base to base. The grinding is effected by inserting the broken seed in a little cavity hollowed out at the extremity of a stick, and, in a vertical position, rubbing it on a stone (Cr, 285). Wapishana women were seen wearing necklaces made of the seeds of *Myroxylon toluifera* (SR, II, 386). In my own wanderings through the Arawak, Warrau, Wapishana, Patamona, Makusi, and Arekuna country, I have observed dozens of



A



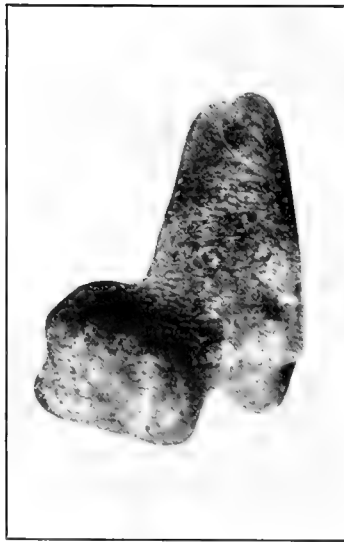
B



C

NECKLACES

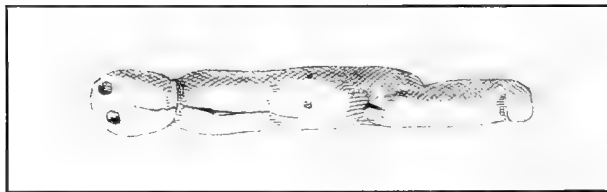
A. Makishi, about 1900. B. Patamout, salt water shells. C. Chest ornament of two silver triangular plates and two reptilian shoulder blades, from the shape of which is that of the former may have been derived. The crescentic silver plate above is an ear pendant which accidentally became entangled by its tassel in the lymaz string when the photograph was taken. Arakuna.



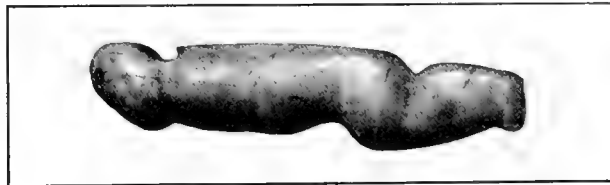
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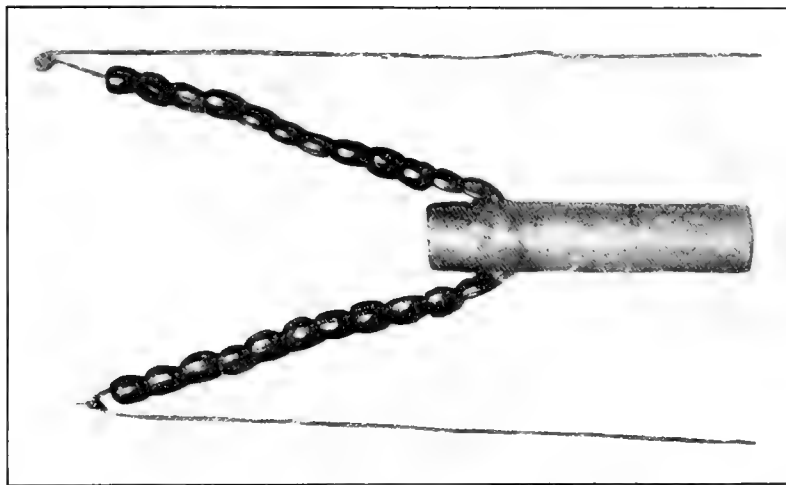
B



C



D



E

CHEST ORNAMENTS

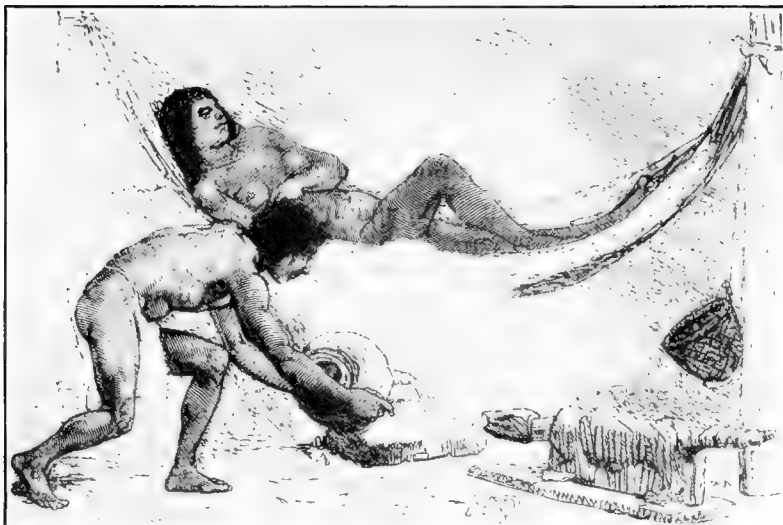
4. *B*, Stone chest ornament. A neatly carved representation in reddish quartz of a tiger (?) sitting on its haunches and holding its front well up. The base of the forelegs is occupied by two clearly bored holes, through which the suspending string was passed. Length, 50 mm. From a piai's grave, Barima River. (Consult WEIR, VI, sec. 292, Georgetown Museum.)

C, D, Shell chest ornament, roughly carved into the shape of a human figure. The hole at the back of the neck has been broken through. Length, 77 mm. Barbados. (Georgetown Museum.)

E, Quartz chest ornament of the Uaupes River Indians. (After Koch-Grünberg.)



A, A French Guiana medicine man. (After Crévaux.)

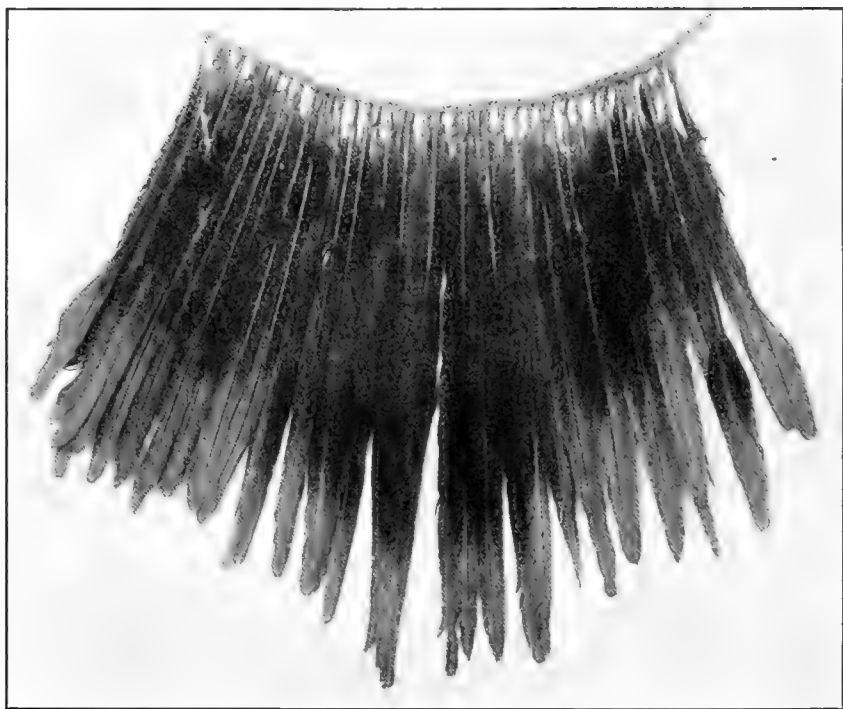


B, Steam bath for Roucouyenne woman after confinement. (After Crévaux.)

A FRENCH GUIANA MEDICINE MAN: VAPOR BATH



4, Black powis feather tippet. Makusi.



B, Red macaw feather ruff. (Georgetown Museum.)

FEATHER RUFFS

different kinds of seed—large and small, black, brown, and red—threaded into necklaces, etc., but, unfortunately, have had no means of scientifically identifying any of them. The following are some Carib names for certain of the seeds thus similarly employed: *afru*, *abia*, *taputapu*, *mamtokosi*, etc. (PEN, I, 96). Of those that particularly seemed to strike my fancy were the *kokerit* seeds, carved into armadillos, worn by Patamona women and children (pl. 141 D). I understand that similarly carved armadillo *kokerit* seeds were formerly in vogue among the Pomeroon Carib. The Surinam Carib string around their neck the so-called *tieng-siri* or stink-seeds, which by their scent drive away the evil spirit *Yoleka* (PEN, I, 96). Other necklaces noted are made of some elongate aromatic seed (pl. 143 B) worn as cures or preventives for coughs, colds, fevers (sec. 532). The Maionkong similarly used for necklaces a bunch of the slender stem of a cryptogamous plant, a fern, called *zinapipo* by them, to which they ascribed talismanic property (ScF, 215). It was, perhaps, some such secret power that accounted for the following somewhat unusual spectacle of a man wearing a seed necklace: On the Corentyn a man had hanging over one shoulder a curious necklace of beads or seeds of a brown color which were perfumed, though too sweet to be agreeable, and understood to be the *kishei*, difficult and rare to obtain, as they can only be had a great distance up the country (StC, I, 272-273).

536. In Cayenne the so-called "green stones" (WER, VI, sec. 241) were worn (PBA, 175, 196). The *Nolaques* (Nouragues) are said to have been famed for their necklaces of solid gold (Cou, I, 146).

537. Of neck, back, and chest ornaments there are a few that require particular mention. The men's stone neck ornament of the Uaupes River Indians (pl. 148 E), a most peculiar and valuable possession, first described by Wallace, is a cylindrical opaque white stone which looks like marble, but which is really quartz imperfectly crystallized (sec. 20). These stones are from 4 to 8 inches long and about an inch in diameter. They are ground round, and flat at the ends, a work of great labor, and are each pierced with a hole at one end, through which a string is inserted to suspend it round the neck. . . . That which the Tushaua wears as the symbol of his authority is generally of the largest size, and is worn transversely across the breast, for which purpose the hole is bored lengthwise from one end to the other (ARW, 191). They have been recently met with again in the same district, among the Tukano and Tuyuka (both of Betoya stock), of the Uaupes and Tiquie Rivers (KG, I, 326). It is among the same Tukano that there have also been found male chest ornaments, the component units of which were made of flat triangular silver plates, called "butterflies" (KG, I, 256). The *Umáua* (Carib stock) employ them at their dances as ear ornaments (KG, II, 123).

Similar silver plates of European manufacture, or made by themselves by hammering silver coin, are beginning to be worn by Arekuna, Patamona, and a few Makusi. I have seen a young Wapishana woman with them. It would seem that these or identical but smaller plates can be worn at pleasure either as nose or ear pendants (secs. 505, 506). The presence of reptilian shoulder blades alongside these triangular plates is remarkable (pl. 147 C) as possible examples of adaptation of a natural form. Metal chest plates, caracolis, etc., were worn in earlier times as emblems or insignia of sovereignty and authority (sec. 751). In similarly distinctive fashion with the medicine men a charm of some description was worn on the chest, suspended by a cord hung around the neck. It might take on various forms; e. g., a crystal set in the cavity of an alligator tooth, an oval piece of resin incised with a frog (WER, VI, secs. 291, 292), even a figurine, either of stone (pl. 148 A, B) or shell (pl. 148 C, D). Attention has been drawn to the toucan, cock-of-the-rock, and other gaudily colored birdskins, etc., attached either direct or upon special frames, to the cotton strings hanging down behind from the back of the man's feather headdress (sec. 519) or tooth necklace, etc. (sec. 531). In addition to or instead of skins, the back ornaments may consist of cotton tassels or "pompons," a palm leaf "sugar loaf" (GOE, pl. iv, fig. 2), iridescent beetles' wings (secs. 527, 575), etc. The wearing of the brightly colored skins would seem to be a prerogative of the men. Patamona women wear various cotton or deer-tail tassels hanging from the necklace down their backs, while Makusi females in the same situation have black curly powis feathers attached to their cotton-covered itiriti-strand head-rings (sec. 530).

De Goeje has described a curious wooden and feather back ornament from the Ojana (GO, 7; GOE, pl. II, IV, X). Somewhat similar articles come from the Waiwai (JO).

538. Ruffs, tippets, etc., are peculiar to the male sex, and when made of feathers have been described as feather cloaks, collars, or mantles. They have been met with among the Akawai (SR, I, 205), Makusi, to whom they were known as warara-raucui (SR, I, 424), Maionkong, Guinau, Uaupes River Indians, Pauixiana (SR, I, 403), and possibly, owing to their having been collected on the Demerara River (CC, 47), among the Arawak. St. Clair mentions a cloak made of the brightest feathers worn by an Arawak chief on the Corentyn (StC, I, 305). They are also met with in Cayenne (Cr, 117), worn by the medicine man (pl. 149 A). The feathers employed were those of the *Rhamphastos erythrorhynchos* and *vitellinus* (SR, I, 403), the white heron (*Ardea*), and the curassow or powis (*Crax*). Im Thurn says that these feather shoulder ruffs and collars are of three kinds. One consists of a closely placed row of tail feathers of one or other of

the two reddish kinds of macaw (pl. 150 B) arranged side by side, their bases connected by a string, while another fine thread passes across them in a straight line, at a certain distance up their length, to keep them parallel to one another and in the same plane. This mantle of gaudy feathers, the top of which is as wide as a man's back across the shoulders, is stretched from shoulder to shoulder, so that, the string being brought under the arnis and drawn very tight, the feathers stand out from the body of the Indian like a gigantic ruff. The two collars are more simple; and they differ only from each other in that one is made of the feathers of a white heron, the other of the black feathers of the powis (pl. 150 A). In either case, the web of the feather is stripped from the quill, and the long pieces of web are made into a fringe which, when hung around the neck covers the shoulders and upper part of the chest. The heron's feathers are worn especially by men engaged in running foot races; the black when dancing, and sometimes when paddling in canoes (IT, 306-307). Barrère speaks of the Cayenne Indians making a cloth to cover themselves with from cotton, but furnishes no particulars of manufacture (PBA, 114). So, also, on the Orinoco, Gumilla makes mention of the Otomac women weaving mats, cloaks (*mantos*), etc. (G, I, 170), but no further details are furnished. The articles mistakenly described by Im Thurn as very short mantles of woven cloth, with illustration (IT, 200), are really the special kind of apron belt (sec. 548) worn by the young Wapishana and Makusi girls at their first menstruation. They continue to be manufactured up to the present day, and there is a specimen in the Georgetown Museum.

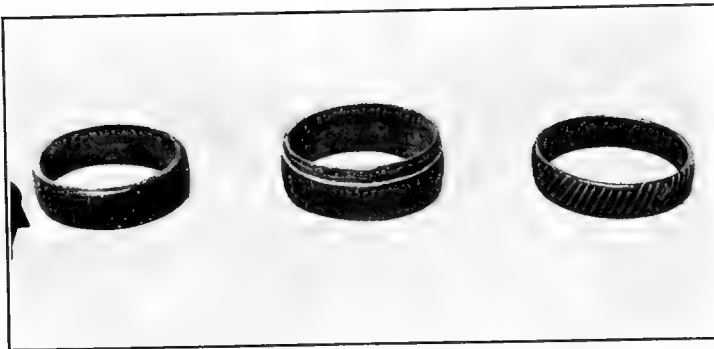
539. Bark shirts, without sleeves, were first mentioned by Humboldt when at Esmeralda. "We saw," he says, "on the slope of the Cerra Duida 'shirt' trees 50 feet high. The Indians cut off cylindrical pieces 2 feet in diameter from which they peel the red and fibrous bark without making any longitudinal incision. This bark affords them a sort of garment which resemble sacks of a very coarse texture and without a seam. The upper opening serves for the head, and two lateral holes are cut for the arms to pass through. The natives wear these shirts of *marima* in the rainy season" (AVH, II, 454). Crévaux saw them worn as chemises by the Mitoua women (Cr, 478, 489), and by a male Piapoco Indian (Cr, 503) on the Guaviar River (pl. 151 A). Both of these are of Arawak stock. There is nothing soft about the material, and it absolutely refuses to mold itself to the shape of the body. The bark from which it is made is employed as cigarette paper by the Roucouyenne, who call it *taouari* (Cr, 478). Schomburgk had previously noted these articles among the Maionkong, who made them of the inner bark of a tree, probably a palm, which they call *tururi*. Each shirt costs a tree its life.

After the tree has been felled the outer bark is removed and the inner bark hammered until it can easily be slipped off the tree. The thicker stems furnish the body, the thinner ones the sleeves, which are sewed on; this is the only sewing of the clothes (SR, I, 403). The manufacture of this hammered bark cloth was also known to the Warrau (sec. 547) and to tribes of the upper Rio Negro and upper branches of the Amazon, who utilize it in the manufacture of dresses for the mask dances (KG, I, 117).

540. Armlets are generally worn, but any suggestion "that they represent a permanent constriction of the flesh which used formerly to be made around the arm" (IT, 197) or "that they are employed for the purpose of enlarging the muscles" (BB, 247), similar delusions to which have been expressed by many an otherwise level-headed observer in the case of leg bands, is as ridiculous as it is physiologically impossible. The Maopityan were seen with arm bands made of palm leaves . . . painted with hieroglyphics. Under these bands were stuck the tail feathers of the blue macaw with the plumes up, so that their tips were 5 or 6 inches higher than the head (SR, II, 472). The Oyana use similar palm-leaf armlets (GOE, pl. I, fig. 17). The Waiwai had theirs made of bark (Cou, II, 379). Maionkong women had cords of human hair on the upper arm and wrist and around the neck (SR, I, 403)—armlets of their own hair (SR, I, 403); similarly with the men (ScF, 228). Guinau men wore around their ankles, knee joints, and arms, braids of their own hair, while some wore beads like the women (ScF, 225). The women [Caberre and many Carib] . . . adorn their arms, neck, waist, and legs with a large number of threads of *quiripa*, i. e., threads of very minute beads which they make with great dexterity from a snail shell . . . Those who can obtain them, load themselves with glass beads (G, I, 125). The Arekuna also often wear armlets of threaded circular pieces of shell (EU, 291). Arawak women, on festival occasions, etc., likewise [in addition to the painting] wear long strings of small beads of different colors closely wound around their wrists, arms, ankles, and above the calves of their legs (BA, 275). I have observed similar practices among Patamona, Arekuna, Makusi, and Wapishana women. It must be remembered that men are not averse to wearing glass beads. Armlets may be in the form of a simple cotton cord, but especially in the case of Carib, Arekuna, Patamona, and Makusi males (pl. 152), they take on that of a more or less broad woven cotton band encircling the arm and furnished at its junction in front with a flat circular disk of bone, shell, or metal, through the central aperture in which their suspensory strings pass to hang down in long, loose, more or less decorated ends. Such disks the Makusi call *apöta*; the Akawai call them



A, Piapoco Indian, showing the bark shirt. (After Crévaux.)

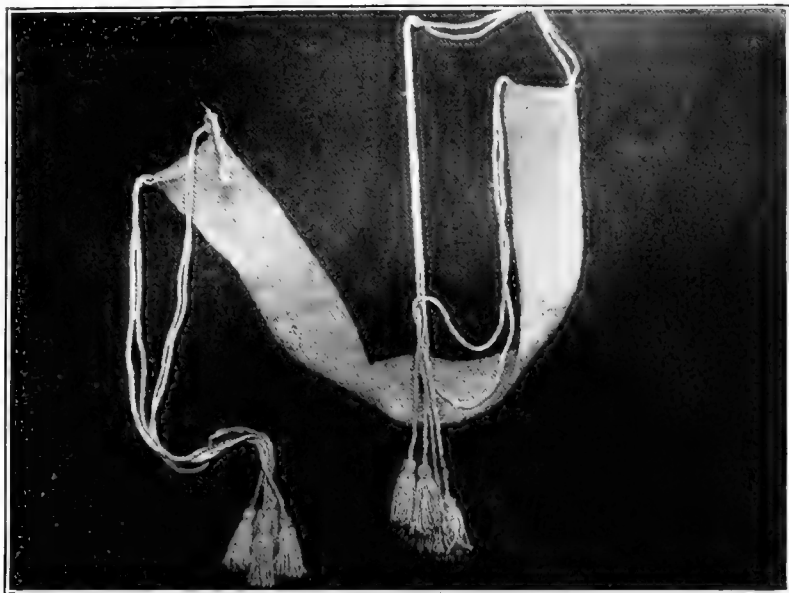


B, Children's bracelets cut from akkoyuro seed.



C, Children's and women's finger rings cut from awarra and kokerit seeds.

BARK SHIRT, BRACELETS, AND FINGER RINGS



1

*B**C*

ARMLETS

A, Arekuna. Cotton. (Georgetown Museum.) *B*, Makusi. Cotton, with shell button. *C*, Makusi. Cotton, without the button.

iwe (CC, 47). If the disk be made of shell, this was the large conch of the West India Islands, or of the large fresh-water snail *uruabi* (sec. 534). The Carib and Makusi place woven bands of cotton around their infants' arms below the biceps (BB, 247).

541. Bark bracelets were found among the Waiwai (Cou, II, 357), while an Arawak chieftain on the Corentyn is said to have sported around his wrists and ankles bracelets or bands of the brightest feathers (StC, I, 305). The strings of jangling seeds, etc., fastened around men's ankles and arms on occasions of dance and festivity can be regarded in the light of musical instruments (secs. 574, 575). Carib, Warrau, and Arawak infants are often to be seen with a bracelet (pl. 151 B) carved from the hard *akkoyuro* seed. These bracelets the Warrau call *mohoro-motu*.

542. On the Essequibo [and Pomeroon] it was the *awarra* and *kokerit* seeds that the Indians sometimes cut into rings (pl. 151 C) to adorn the fingers of their wives and children, and they take a beautiful polish [by rubbing with oil] (StC, II, 24). Perhaps the Indians first learned of these finger rings from the Negroes, who certainly manufactured them both in Cayenne (FE, 174) and in Surinam. Thus in the latter colony the *awarra* or *avoira* . . . is much esteemed by the Negroes, who exercise their ingenuity in forming rings out of the stones, which they decorate with ciphers, initial letters, and other devices, and then dispose of them to the Europeans, who mount them in gold (St, I, 22).

543. Belts or girdles are made of hair, either of man or monkey, of cotton bands variously woven, of threaded teeth, beads, or fruit shells, and of *kamwarri* strips. It is to this belt or girdle that the apron or lap may be attached. Thus in Surinam many [women] wear a girdle made of human hair around the waist, through which, before and behind, they fasten a square broad piece of black cotton, but lighter and without a train, like the *camisa* of the men, both sexes wearing these belts or girdles so low that they almost slide down over their buttocks and make their bodies appear wonderfully long (St, I, 386). These human-hair belts, *matupa* (fig. 153 A) in our own colony, were met with among the *Wapishana* (SR, II, 55, 56), the *Arekuna* (SR, II, 221), and the *Maionkong* men. In the last case the bigger and thicker such a belt a surer sign of the valor of the wearer, as the hair of slaughtered enemies only was used (SR, I, 403). From what has been said, however, of the use of this material under armlets, and of its employment by women, it is quite possible that in many cases the human hair in question may have been their own. Monkey-hair girdles were worn in British Guiana by the *Arekuna* (ScF, 204), in Surinam by Carib women, who employed that of the *Stentor ursinus* (AK, 171), and in Cayenne by *Roucou-*

yenne (Oyana), who utilized the couata for the purpose (Cr, 90; GOE, pl. II). Oyana also wore a strip of jaguar skin (GOE, pl. IV). Narrow cotton bands woven on a loom (sec. 55) were worn by Arawak, Carib, Oyana, and others. The broad girdle of the Guama, of the Orinoco, was made of cotton so delicately spun that the Spaniards were wont to seek and buy them for fine neckcloths

(G, I, 163). The Makusi will plait a thick cotton cord upon two arrow sticks (sec. 53), and when completed will bend it twice upon itself in three equal parts and, by sewing, maintain it in this position to form what is now a broad flat belt. The Arekuna also wore cotton-thread waist belts (App, II, 307). Monkey, bush-hog, and jaguar teeth are also strung for waist belts on the upper Rio Negro and worn at dances, etc. (KG, I, 167). A string of shell beads, or rather shell rings, wound several times around the waist formed the woman's belt in Cayenne (PBA, 194). The hard-shelled campanulate seed-pods strung on strings attached to a waist cord acted the part of aprons for those women not accustomed to the use of beads (PBA, 196) and at

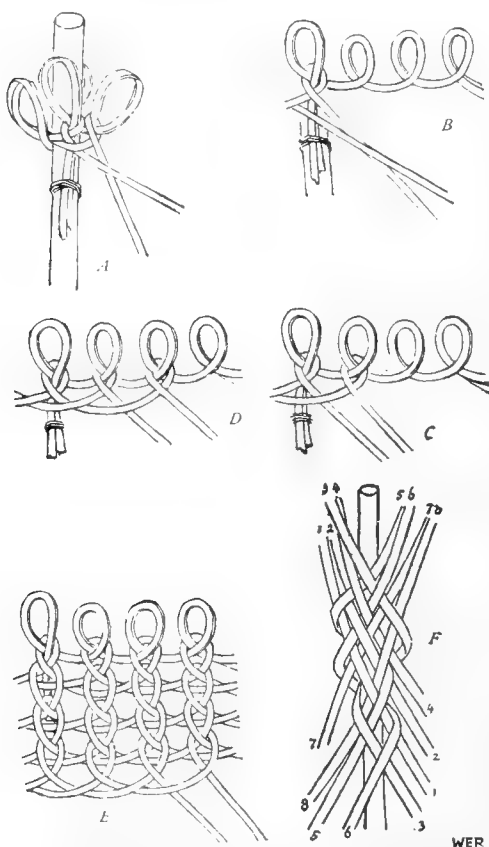
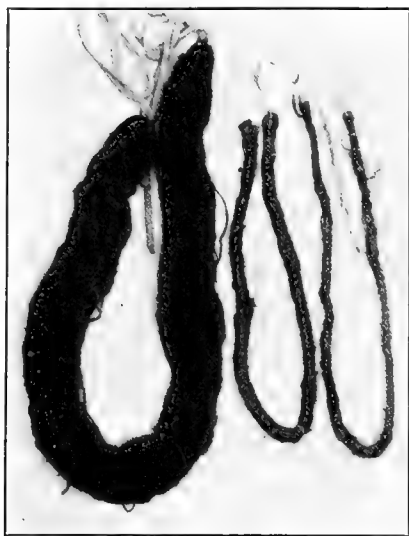


FIG. 230.—Manufacture of certain Patamona and Makusi cylinder-plaited belts. A–E, Four-loop pattern; F, eight-strand pattern.

the same time served as musical instruments. The huge decorated bark corsets of the male Umáua (Carib stock) of the upper Apaporis (KG, II, 27, 122) do not belong to the Guiana region.

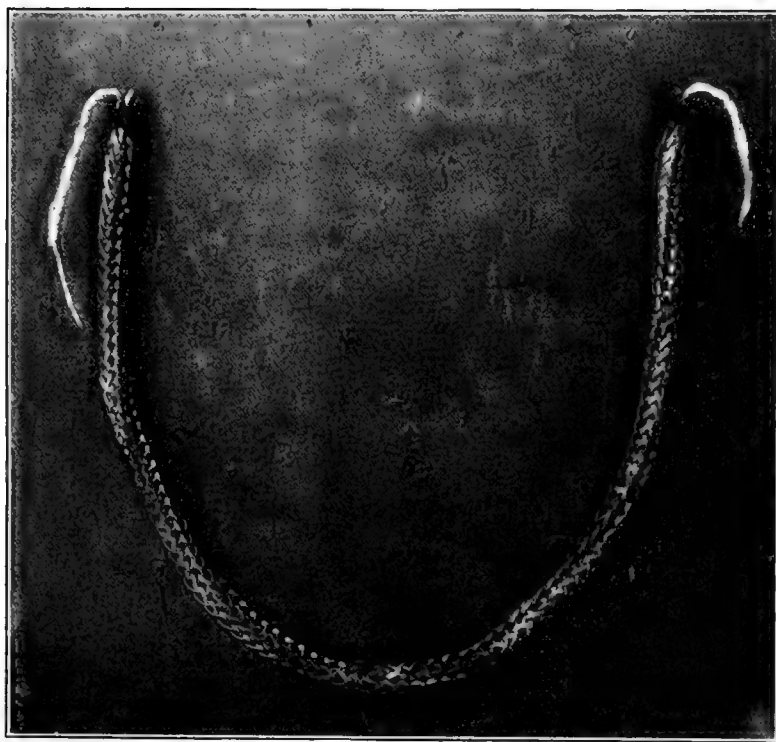
544. Patamona and Makusi manufacture a hollow cylindrical belt out of the split strands of the kamwarri, one of the “pimpler” vines, or from the mamuri (pl. 153 B, C). Two strands, after being firmly tied at their extremities to the end of a wooden pencil (fig. 230 A), are treated as a single strand to form four loops around it, this first



A



B



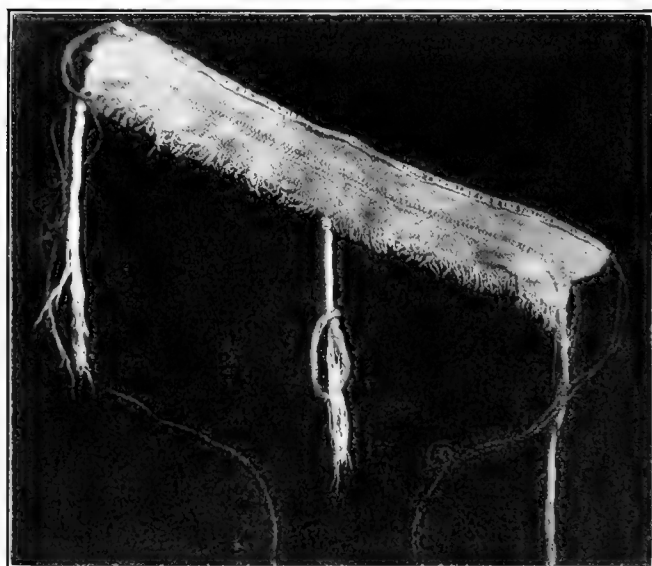
C

BELTS

A, Arekuna hair belt. (Georgetown Museum.) B, Patamona and Makusi hollow cylinder plaited kamwarri, etc., belts. C, Patamona cylinder plaited four-loop kamwarri belt.



A, Glass bead apron. Maiongkong. (Georgetown Museum.)



B, Fringed cotton apron belt of Wapishana and Makusi females used at first menstruation (Georgetown Museum.)



C, Loose cotton string apron of the Arekuna women. (Georgetown Museum.)

GLASS BEAD AND COTTON APRONS

row of loops (B) being temporarily kept in position by means of the left thumb and fingers. On completion of the fourth loop the two strands are worked singly (C), the one being slipped around the base of the first loop of the first row, and the other around that of the second one, so as to form the first two loops of the second row, care being taken at the same time that each strand passes over itself as well as over its fellow (D). The process is thus continued (E) until such time as a sufficient length is obtained, when, after removal from the pencil, it is securely tied at both extremities. I have also seen these people with similarly constructed belts made of six loops. In cotton, the Arekuna made them with as many as 15 (sec. 54).

545. The Patamona have a similar hollow cylindrical belt, likewise made of kamwarri around a wooden pencil, but in this case plaited of eight strands (pl. 153 B), in four pairs of two each. Its commencement is shown in the diagram (fig. 230 F) and care must be taken in its subsequent manufacture that four strands are always maintained on either side of the stick and that the strand nearest the starting point alway passes underneath the stick so as to emerge between the second and third strands of the opposite side.

546. Loin cloths, aprons, laps, and skirts.—For decency's sake, as Gumilla tells us, the missionaries distributed clothing, especially among the women, but in vain. They fling it into the river or hide it, but do not cover themselves, and when remonstrated with, they reply "We do not cover ourselves, because it gives us shame." . . . They recognize shame and bashfulness, but the signification of the terms is changed. . . . They feel abashed at being clothed (G, I, 122). Harcourt, on the Oyapock River, Cayenne, in the early seventeenth century, describes the people as "all naked, both men and women; and this I observed among them that although the better sort of men (especially the Yaïos) doe cover their privities, by wearing over them a little peece of cotton cloth, pretily woven after their manner; yet did I never see any of their women covered in any part, either above or beneath the waste, albeit they daily conversed amongst us, but were all (as the plaine proverb is) even starke belly naked" (HR, 362). Davies, on the Amazon a few years later, speaks of the Indians being altogether naked, both men and women having not so much as one thread about them to cover any part of their nakedness (DW, 414). Van Berkel, on the Berbice, about half a century subsequently, says that the men (Warrau) are much more jealous but nevertheless more impudent, running mostly without a lap to cover their nakedness, which they hoist up by the head towards the belly with a little band tied fast around the body behind (BER, 67). Beyond these (Akawai) Indians (in the interior), says Bancroft, are

several tribes who appear entirely naked, not even covering those nudities which nature seems to have taught the inhabitants of other countries to conceal (BA, 270). On the Corentyn St. Clair found (Arawak) women and young girls who were stark naked busily employed in their domestic affairs making bread (StC, 1, 311). In Cayenne Barrère has recorded how, among the nations bordering on the Amazon, the Indians are entirely nude. They regard almost as a certain sign that he who would cover what shame obliges us to hide would soon be unfortunate, or would die in the course of the year (PBA, 121-122). Coming to more recent times, there is Wallace's account of the Uaupes River women, who, while dancing in their festivals, wear a small tanga or apron made of beads, prettily arranged. It is only about 6 inches square, but is never worn at any other time, and, immediately the dance is over, it is taken off (ARW, 342, 343). There is Koch-Grünberg's authority for confirmation, even up to the present time, of the absolute nudity of some of the women in certain tribes of this area. The Zurumata are said by Sir Richard Schomburgk to have lived in a state of actual nakedness (IT, 193). The same traveler speaks of some Maionkong women living in a similar condition (ScF, 237). So also De Bauve, in 1830, describes the Oyampi women, of Cayenne, as being absolutely naked (Cou, II, 436). On the islands at the time of Columbus's second visit to Santo Domingo the men were found as naked as they were born (DAC, 452). In concluding these prefatory remarks, it is well to bear in mind what is already well known in connection with many other races, but so pertinently expressed by Kirke relative to the Guianese Indian: The climate of Guiana is exceedingly warm and moist; up the rivers scarcely a day passes without several showers of rain. The natives in consequence go about in a nude state, and the rain as it falls runs off their oiled backs like water off the proverbial duck. But when, by the efforts of some well-meaning but misdirected missionary, they don clothes they soon become victims of phthisis and pneumonia, their clothes getting wet through and drying on their bodies several times a day. It is not from want of knowledge of clothes that the Indian goes naked (Ki, 159). As Coudreau pointed out, the Indians regard European clothes as ornaments, wearing them over their own bead or feathered decorations. He mentions how the Atorradis [Atorai], etc., speak of clothes as the *cachourous*, i. e., beads, necklaces, of the whites (Cou, II, 317). Ule would seem to regard loin cloths and aprons as originally designed for protective purposes (EU, 291). Certainly to the Carib an aboriginal word for loin-cloth would seem to be unknown. This is probably true of many other tribes.

547. The material of the various decorations or coverings for the loins and adjacent parts was either bark, cotton, hair, seeds, or beads, and occasionally palm leaves, jaguar skin, etc. Among the Warrau of this colony the women wore a cord with a piece of the bark of the kakaralli beat soft, and fastened fore and aft (HiB, 329). A more detailed description of the article used by the same people is given by Schomburgk. The woman's apron was of flexible bark; its upper border was tucked over a string tied across her hips. From above down it became narrower and narrower until it ended in a shred, about the thickness of one's thumb, which, passed between the legs, was fixed into the string behind (SR, I, 194). The Surinam Forest Indians, among them the Wajakoele (Wayakuli), similarly covered themselves with manbarakrak (*Lecythis ollaria*) bark (PÉN, I, 95). On the Orinoco the Warrau men would seem to have used a piece of bast sheath of the ite palm for a covering; women employed a bundle of ite shreds (G, I, 146). The Uaupes River Indian men wore this covering in similar fashion—a small piece of tururi [bark] passed between the legs and twisted onto a string round the loins (ARW, 342; Cou, II, 170). The Taruma wore bark even in Coudreau's day (Cou, II, 347). He mentions women's bark aprons with the Waiwai, etc. (Cou, II, 357), and says that, among the Wapishana, the length of the bark "lap" (tururi) was, to a certain extent, a guide to the importance of the wearer (Cou, II, 317). Still more recently there have been described men's bast aprons, variously painted, used for dancing purposes on the upper Rio Negro, e. g., the Tiquie River (KG, I, 289).

548. At Santo Domingo, on the first arrival of the Europeans, while the island men, as already mentioned, went about naked, the women wore a covering of cotton which they bound around their hips, while others used grass and leaves of trees. This covering of cotton was called *nagua* by those Indians, from which the Spanish word *enagua*, meaning the inner white skirt of a woman's dress, is derived (DAC, 452). On the mainland, cotton cloth, and subsequently linen, was employed. Among the Oyampi males a native-woven strip of white cotton cloth (1.40 meters long, 34 cm. wide at the center, and 45 cm. at the extremities) is placed at its middle between the thighs, while its ends are passed under a small cotton waistband, falling over it in front and behind. It was ornamented with black stripes forming arabesques and fringes, the black coloration being effected by dipping the cotton before weaving into an infusion made with the leaves of a creeper (Cr, 213). These coverings among this same people have been noted by other travelers (e. g., Cou, II, 436). In our own colony the native cloth [of the Carib], supported by a cord around the loins and adorned with tassels at

either end, was much more ample than was worn by any of the other tribes. On festive occasions they wore them 6 yards in length (BrA, 49). In Appun's day the Arekuna men wore a long length of salem-pore (App, II, 368). In Surinam the Carib women wore a dark blue cloth fastened to a monkey-hair girdle (AK, 171). The only dress

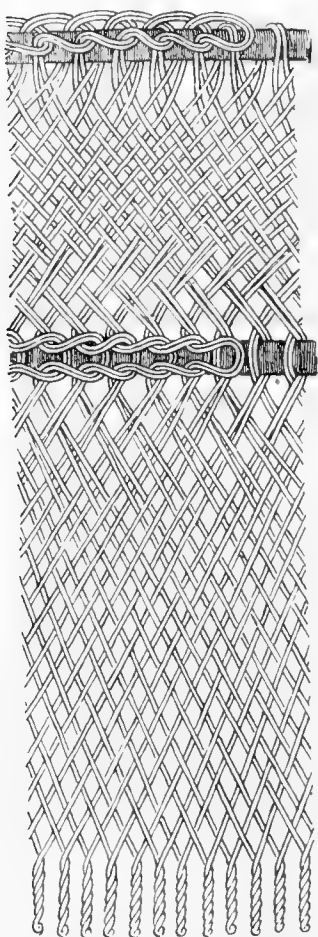


FIG. 231.—Section of fringed cotton apron belt used by Wapishana and Makusi at first menstruation.

of these Indians [Surinam] consisted of a slip of black or blue cotton worn by the men to cover their nakedness, and called *camisa* [from the Spanish for petticoat, made of a distinct blue cotton material, termed *salempures*, *salemporas*] . . . Being wound around their loins, it passed through between their thighs and the ends of it, which were very long, they either threw over their shoulders or negligently let them trail on the ground (St, I, 386). The Indians [around Berbice] wore no clothing except a band of blue cloth, or of bark when the former was not procurable, tied round the waist and brought between the legs to fasten before . . . This was worn both by the men and women (Pnk, I, 516). Linen or cotton cloth was thus worn by Arawak men (BA, 273). Gumilla says that in the neighborhood of Spanish settlements, or where in touch with Christian Indians, the men, though not all, used a remnant of linen which some called *guayuco*, others *guarruma* (G, I, 122)—some 3 yards of linen (G, II, 77). Among the Carib of the Caris River, lower Orinoco, Humboldt speaks of the women wearing only the *guayuco* or *perizoma* in the form of a band. An Indian of the Carib race is far from considering herself unclothed if she wear round her waist a *guayuco* 2 inches broad, even this

band being regarded as less essential than the pigment which covers her skin (AVH, III, 74-75). The waistcloths of the Maionkong were of their own manufacture, hung with fringes and dyed red (ScF, 215). They may have been identical with the present-day fringed cotton apron belts, also dyed red (pl. 154 B), used at their first menstruation by young Wapishana and Makusi girls (sec. 538). Their construction (fig. 231), which I have not observed in the mak-

ing, shows close analogy with that of the baby sling (fig. 226), the only essential difference being, apparently, that the original cotton cord has not passed direct from top to bottom of the frame (fig. 211), but through the intermediary of a head stick (fig. 199), so as to allow of its ultimate release (sec. 465). There are records of women's aprons composed of loose cotton strings, arranged in a fringe (pl. 154 C), from the Arekuna (App, II, 308) and Maopityan (SR, II, 472). According to Kappler, hair from the couata (*Ateles*) and howler (*Myctes*) monkey was knitted by the Surinam Aloekoejanas (Alukuyana) for aprons (PEN, I, 95).

549. The glass-bead apron (pls. 154-157) was of course a later development. Bancroft describes the Arawak apron as a covering of small glassbeads of different colors, strung on threads of cotton and so disposed that, when woven, they form different figures by their different colors. This covering is as large as the two palms of a man's hands and almost square except that the upper angle is narrower than the lower. It is fastened before by strings of beads tied around the waist and hangs before (BA, 273). Pinckard [at Berbice] describes it as made of small beads of different colors, ingeniously put on threads of cotton or of the silk grass so as to give the apron the appearance of being woven in a variety of figures. This is used as high dress and is much valued (Pnk, I, 516). Duff also speaks of its use on high days and holidays or festivals, and of their being tastefully worked with beads to represent the flowers, fruits, and animals around the Indians in the bush, and of their costing from 6 to 10 shillings when sold to Europeans (Df, 261). In Surinam, Stedman talks of an apron of cotton with parti-colored glass beads strung upon it . . . of no great size, being only about 1 foot in breadth by 8 inches in length, ornamented with fringes, and fastened around the waist with cotton strings (St, I, 386). It is true that a pattern may be common throughout a certain area, e. g., the Wapishana and Atorai women very commonly wearing an apron of white beads with a large black cross in the center (Cou, II, 317), and the idea that, according to their different tribes, the women generally make their aprons of particular colors and patterns (IT, 194) is correct within limits. Certainly at the present day many of the patterns are in common, while the colors will, of course, depend upon that of the raw material obtained through trade and barter (sec. 535). There is one very curious thing, however, that does practically run in common, and that is the shape, for the apron, large or small—and for little children it may have a width of but 3 inches or so—the lower edge is invariably wider than the upper, very much after the style of a truncated isosceles triangle (fig. 232). The Warrau woman's bark apron (sec. 547), as described by Schomburgk, was nar-

rowed from above down (SR, I, 194), while the cotton loin cloth of the Oyampi mentioned by Crévaux (sec. 548) was narrowed from the two ends to the center, both of them shapes that would insure a good fit. In either case, the extremity hanging down over the waist-band, belt, or string, in front would have the shape presented by the glass-bead apron, an identity that can hardly have been accidental. In other words, the shape of the bead apron is perhaps a development of that of the bark one; i. e., it is a remnant of a primitive form. Schomburgk's statement (SR, II, 474) that the Zurumata made their aprons of seed grains, and Im Thurn's (IT, 194) that the Pianohotto women "make theirs in the usual fashion, but instead of beads, employ small bright-colored seeds," opens up the very interesting question as to whether the peculiar method adopted in threading the glass beads of the modern apron—i. e., upon two

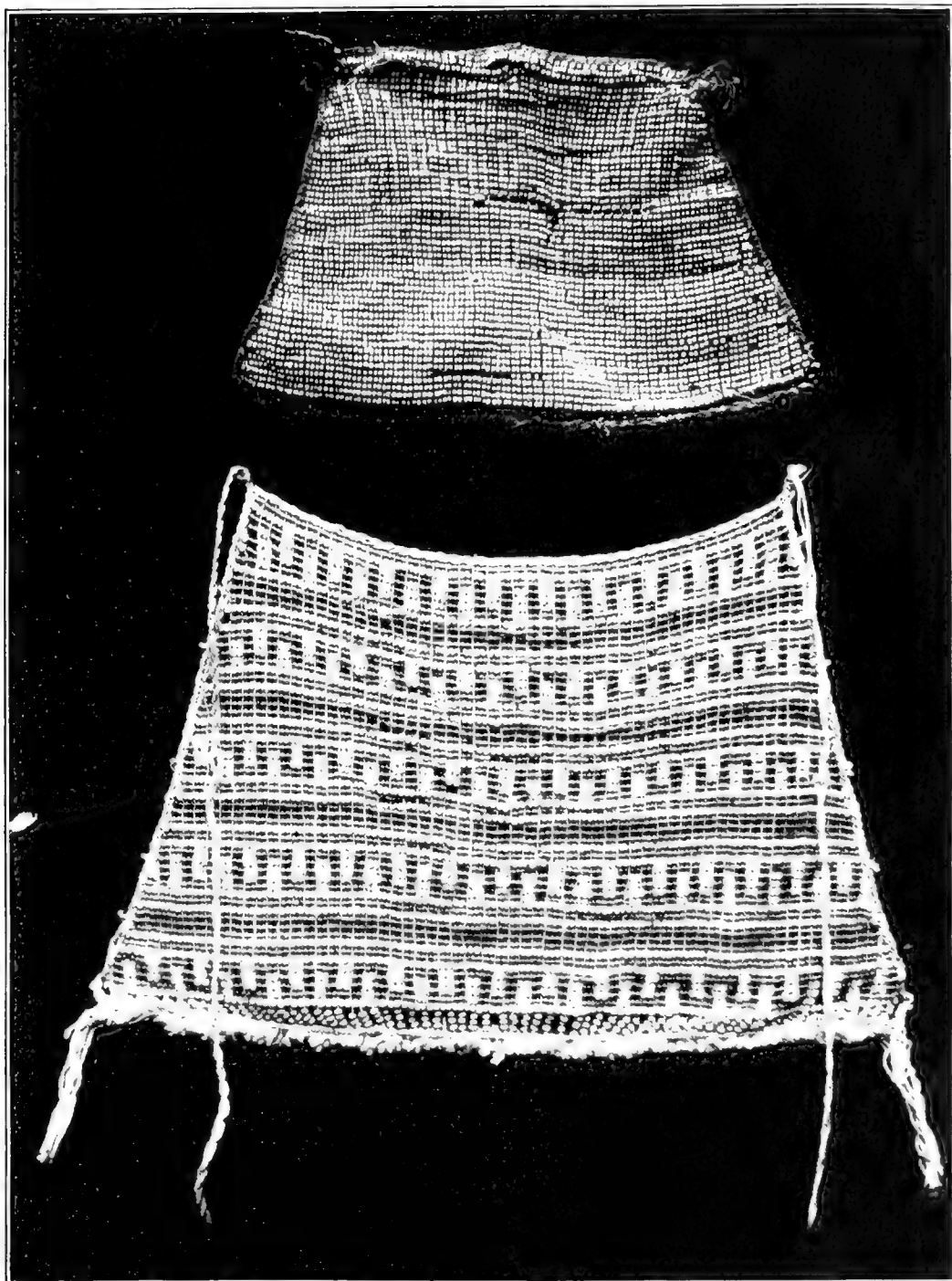


FIG. 232.—Shape of apron.

horizontal cotton threads separated by vertical ones—is of North American, European, or indigenous origin. Never having had an opportunity of examining such a seed apron, I am unfortunately not in a position to discuss it.

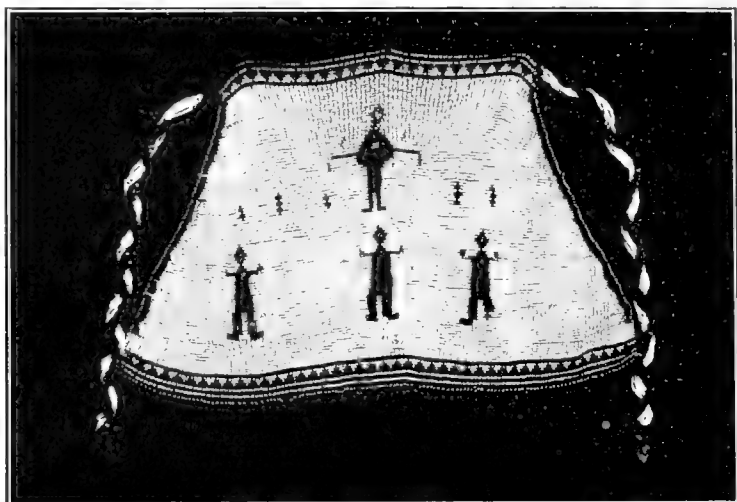
550. The Creole terms *kway* (Pnk, I, 516), *queyu*, *kuyu*, etc., applied to the glass-bead apron, is apparently identical with that of the original cotton loin-cloth *guayuco* of the Orinoco Indians (G, I, 122), *wayuco* of the Pomeroon Arawak, etc. On the Uaupes River, Wallace speaks of it as *tanga*; the Makusi call it *mosa* (SR, I, 358). *Calimbé* (WJ, 81) or *calembé* (Cou, II, 436) are (? Creole) terms for the cotton loin cloth in Surinam, etc., and yet, strange to say, *kuyu* would seem to indicate the men's loin cloth in Cayenne (Cr, 163, 213). Among the Japii, a branch of the Waiwai, both men and women wear jaguar skins as aprons (Cou, II, 383). The jaguar belt has already been noted (sec. 543). A feather belt, or back ornament, is figured from the Oyana (GOE, pl, II, fig. 10). The Waiwai have similar back ornaments (JO).

551. One or two records remain of so-called skirts being worn by men, but apparently only under special circumstances of festivity, their particular signification, if, indeed, there is any, being totally unknown. Thus, Brown speaks of what took place at Enamouta village on a tributary of the Ireng: "After our arrival a lot of Indians of a branch tribe of the Makusi, called Tasoulema, came from another village to join the dance equipped most picturesquely in headdresses, tippets, and short skirts made of the young pale-yellow leaf of the ite palm (BB, 115). I, myself, also know of Makusi, Patamona, and Wapishana men donning skirts of the kokerit-palm leaf at the Parishara dances (sec. 589). And, finally, skirts have been mentioned as being employed in certain of the masked dances

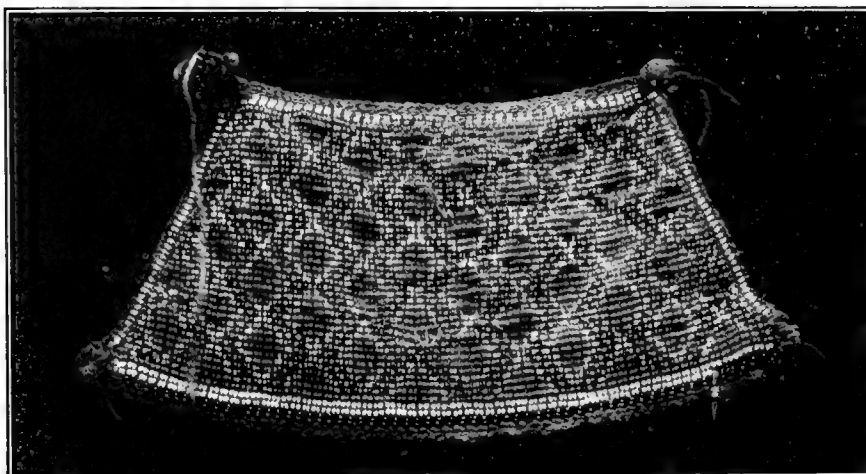


GLASS BEAD APRONS

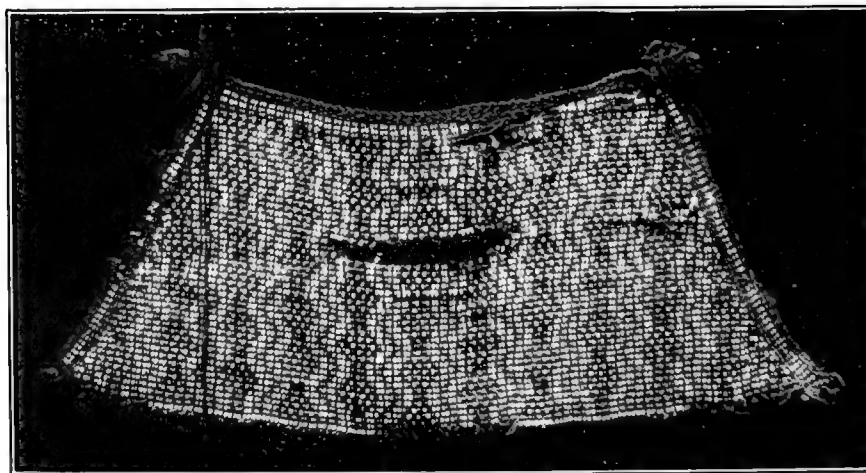
The lower specimen shows a periwinkle-track design. (Compare with fig. 169, *E*.)



A



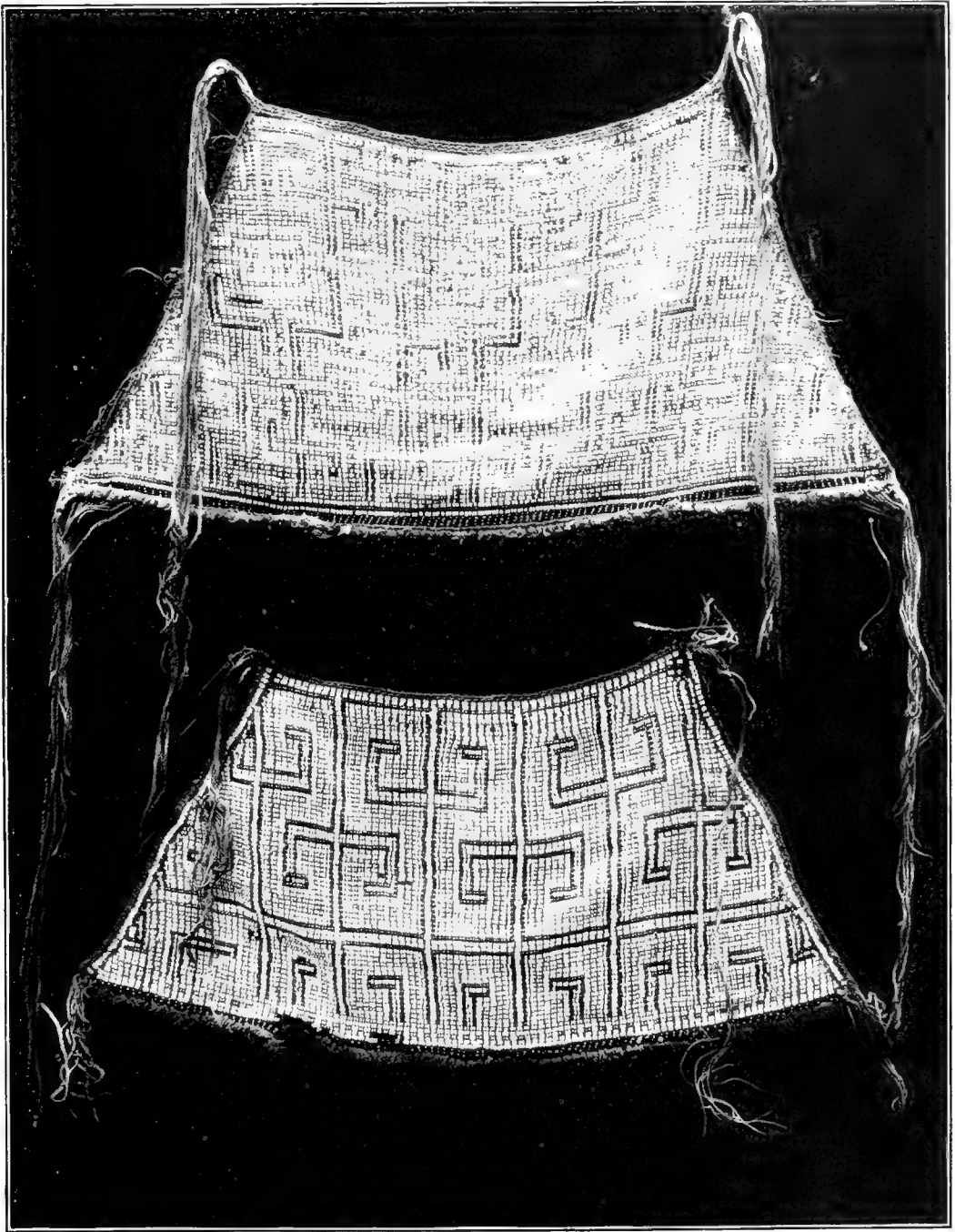
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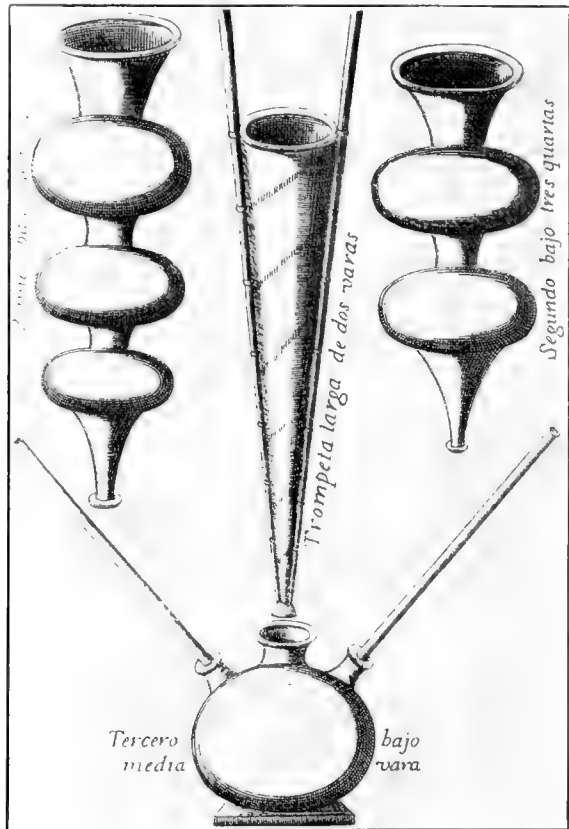
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GLASS BEAD APRONS

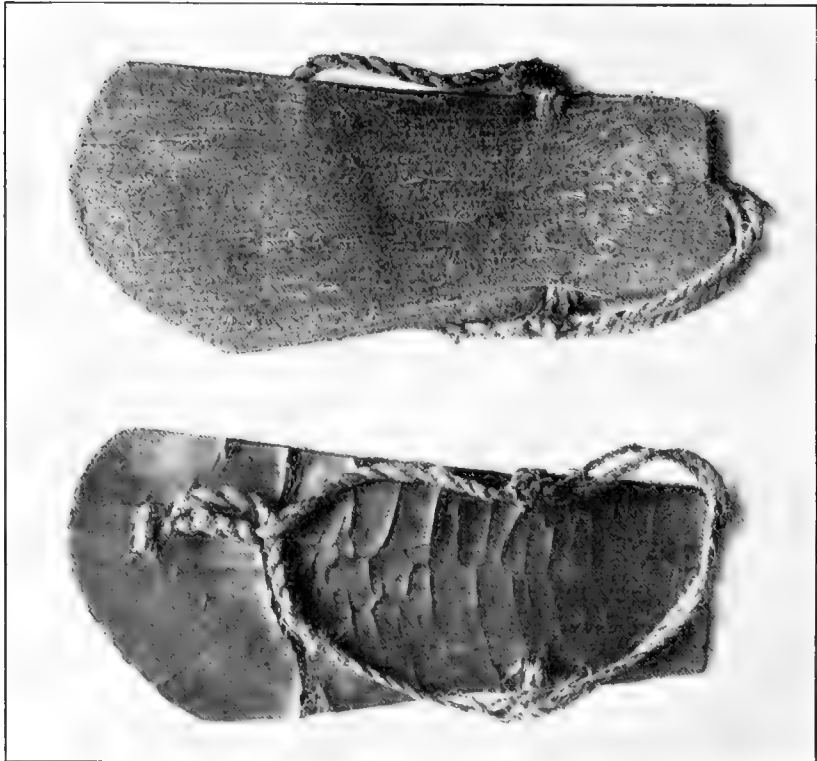
A, Maiongkong. (Georgetown Museum.) B, C, Showing "snake mark" designs.

**GLASS BEAD APRONS**

The upper specimen is worked in a scorpion pattern. (Compare with fig. 170.) The lower is intended to represent a frog-leg (?) design.



B, Bark and clay trumpets from the Orinoco. Early eighteenth century. (After Gumilla.)



A, The ite sandal. Makusi, etc.

on the upper Rio Negro and branches of the upper Amazons (KG, II, 312).

552. Leg ornaments.—Leaving aside the strings of jangling seeds (GOE, pl. I, fig. 24), and beetles' wings, etc., which must be regarded as musical instruments, the only ornaments—and it is possible that they are articles of sanitary utility rather than objects of decoration—met with on the legs of the women, are the cotton straps or bands. The members of Columbus's party were able to distinguish which of the women were natives of the island (Guadeloupe) and which captives, by the distinction that a Carib woman wore on each leg two bands or rings of woven cotton, one fastened around the knee, and the other around the ankle, by this means making the calves of their legs look big. . . . These bands or rings of woven cotton worn by the Carib women were about 2 inches wide, and sometimes embellished with pieces of gold, pearls, and valuable stones; a sort of double garter known to them as *llauto* (DAC, 440). On the mainland similar woven cotton bands were worn by the women of the Carib and other tribes (ScF, 215), e. g., Makusi (BB, 247), Arekuna (App, II, 303), Maionkong (SR, I, 402), Oyana (GOE, pl. I, fig. 15), Arawak (BA, 274; StC, I, 310), Wapishana. They were either knitted onto the child's limbs direct, i. e., made after the style of a napkin ring (Carib, Wapishana), or woven into a broad band which was then fixed in position by tying (Arawak, Warrau). The latter is or was certainly used both by men and women (sec. 55). The Arawak call these anklets *tukuru-kuri*, and the Warrau *akkamarabassa*. Gumilla informs us that in some of the Orinoco nations as soon as the little girl is born the mother ties below its knees and above its ankles four broad and strong bands made of twisted thread of the *pita* [silk grass]. With these they go to the grave. It is a very ugly thing, he continues, to see their calves, because being compressed above and below by these iniquitous fastenings, the flesh is unable to grow in these situations, and the size of the calves is increased out of all proportion (G, I, 126). So, again, on the lower Orinoco, Humboldt writes as to how he observed with pain the torments which the Carib mothers inflict on their infants, for the purpose not only of enlarging the calf of the leg but also of raising the flesh in alternate stripes from the ankle to the top of the thigh. Narrow ligatures, consisting of bands of leather or of woven cotton, are fixed 2 or 3 inches apart from each other, and, being tightened more and more, the muscles between the bands become swollen (AVH, III, 84). With one notable exception, that of Bancroft, this extraordinary appearance due to the cotton bands, tightly tied below the knees and above the ankles, being responsible for the boldly outlined calves of the Carib female has been noted by practically all the writers on the Guianese Indian. This is well shown in the following excerpts, which at the same time indicate a

lack of knowledge of physiological truths: They hinder the growth of the parts by their compression, while the calf, which is unconfined, appears in consequence unnaturally large (Br, 121); for the purpose of enlarging the muscles of those limbs (BB, 247); they constrict them so tightly in order to have, as they say, goodly shaped legs (FE, 49); the consequence is that the muscles of the calf swell out to a very abnormal degree between these bands, while those parts of the leg which are actually constricted remain hardly thicker than the actual bone (IT, 192); giving their peculiar shape to the calves (WJ, 82); deformity of the calves due to the tight bandaging (AK, 172); a strange fashion of increasing the size of the calf of the leg by tying bandages round the other part when young (ScF, 215); giving the calf an unnatural protuberance (ScG, 226); bearing comparison with the practice of tight lacing (SR, I, 344); occasions their calves to swell to an enormous size by the time they are grown women, and gives their limbs a very odd and unnatural appearance (St, I, 387); for the purpose of swelling out the calf, which they consider a great beauty (ARW, 343); a string of beads or cord is fastened around each leg above the ankle and also below the knee to give shape to the leg (Da, 250). Martin, who traveled in Surinam, reports that these bands are said to ease the load and gait, while others maintain that they are a safeguard against elephantiasis (KM, 68). Gumilla has recorded from the Orinoco that the men tie on their legs, below the knees and above the ankles, four very loose tassels, made up of a number of cotton threads. These serve both as ornamentation and as a defense against the numerous minute ticks, lice, etc., which infest their fields. When such a person stumbles upon a nest of these they become entangled in the tassels and so do not succeed in molesting the rest of the body (G, I, 124).

553. Sandals.—When traveling between the Rupununi and Rio Branco, Schomburgk was, I believe, the first to report the use of sandals (*salza* in Makusi) made of the half-sheathing bases of the ite (*mauritia*) leaves, which are better suited for this purpose than those of any other palm (pl. 158 A). They are fastened in a fashion not much different from that of the ancients, and a pair of these sandals lasts at least a few days' journey over these rocky plains (ScT, 25). The sandal is cut out of the base of an ite palm leaf stalk to the shape of a wide wedge (fig. 233 A), shaved down on its inner surface, and cleaned of its cuticle for some two-thirds of its broader extremity on its outer surface. This is done after it has been sun dried for two or three days, but if in a hurry it may be rendered pliable by warming over a fire. The foot is next placed in position, and with the point of a deer-horn awl one mark is made in the fork between the big and second toes and another immediately below the point of the inner ankle. The foot removed (B), holes are drilled at the spots marked, care being taken to prevent splitting, as the drilling is not vertical, but at a very acute

angle. Two more holes are next drilled (similarly at a very acute angle) just anterior to the front one, and yet another hole is drilled at a spot opposite that corresponding with the inner ankle. This method of drilling a hole right through the sole is only practiced when the material happens naturally to be, or has been shaved down, too thin. Otherwise no holes or strings appear on the undersurface, the two holes in front being joined with the original one by means of the channel drilled within the actual substance of the sole, the two lateral holes opening into the sides. A long ite-fiber string (C) is now passed through the two anterior ones from the upper surface up to about its middle, its ends (*ab*) next brought back again to the front through the originally pierced hole and finally looped, one through the other; i. e., the one is passed between the two component strands of the other. The ends of the string are next inserted through the two posterior holes

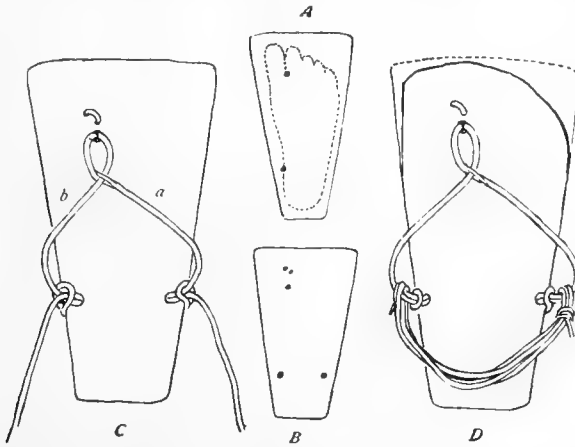


FIG. 233.—Manufacture of the ite sandal.

and looped upon themselves. The foot is now again placed in position, the crossed strings (*ab*) loosened or tightened, as the case may be, to fit over the front in the interspace between the big and second toes and fixed in position as required by means of the side loops. Once fitted, the two ends are passed backward and forward over the heel (D) onto themselves and finally tied at the side loops. The anterior margin of the "sole" is at last rounded off into shape. I found the Makusi speaking of these sandals as *pisassa* (? Spanish *pisar*, *pisada*), and the Wapishana as *darket*, the latter very likely a corruption of *sarpat* (Spanish, *zapato*), the term applied by most of the neighboring tribes. Appun reports that sandals are now and again manufactured by savanna Indians from the thick fresh hide of the maipuri, which of course last much longer than those made from ite (App, II, 228). Penard confirms this from the mountain regions of Surinam, where the Indians make, or made, sandals (*mokalía*) of tapir-leather or ite-palm leaf-stalk fastened over the ankles with bands (PEN, I, 96).

CHAPTER XXII

MUSICAL AND OTHER SOUND INSTRUMENTS

Preliminary: Early morning music (554); varieties of instruments (555).
Trumpets, tubes: Clay (556); clay resounder with cane tube (557); bark (558); wood, wood and basketry (559).
Flute types of instrument: Wood, bamboo (560, 561); clay (562).
Flageolet types of instrument: Wood (563); bone (564); gourd (565).
Panpipes (566).
Whistles: Wood (567); clay (568); bone (569).
Reed instruments (570).
String instruments: Monochord (571); viol and violin (572).
Percussion instruments: Rattles (573); hard-shell seed pods (574); beetle-wing cases (575); hollow cylinders, dance sticks, etc. (576); drums, skin (577-579); wood (580); and substitutes (581).
Friction instruments (582).

554. In the early morning, says Brown, about 4 a. m., the Indians [Makusi] in these mountains [Pakaraima], as well as those on the savannas, become wakeful and talk a good deal, some of them singing a most tuneless, dirgelike song. At Enamouta (a village on one of the branches of the Ireng) they added the noise of a drum to the performance, and at daylight they all issued from their houses simultaneously, greeting the morn with cries and loud shouts (BB, 129). The Carib Islanders, in the morning as soon as they are awake, used commonly to play on the flute (RO, 509). On the upper Rio Branco in the Wapishana malokas the first to awake strikes a drum until all jump out of their hammocks, and in the meantime he will, with a quick step, promenade around the house with his barbarous music (Cou, II, 268). On the Vichada, a branch of the Orinoco, the Guahibo came out at sunrise with a panpipe, and made the rounds of the village while playing on this instrument. The purpose in view, however, was not clear (Cr, 533-554). With the Otomac on the Orinoco, there was an early matutinal wailing for the dead as a matter of daily routine (G, I, 167). At the Makusi village of Makrapo, nestling in the Pakaraima Mountains, about two days' march behind Toka village, while lying in my hammock in the early morning, I heard a shell blowing at a house farther up the mountain side. My host told me that it was customary and that, in the old days, he remembered how it used to be blown of an evening, but knew of no reason for the

practice. So also at the Makusi village of Inongkong, another day's walk farther on, both of a morning and of an evening there was a drum beaten around the settlement.

555. For rough descriptive purposes only, the musical appliances of the Indians may be spoken of as wind, reed, string, percussion, and friction instruments, each group containing more or less varieties. Thus, percussion instruments include rattles, "bells," cylinders, drums; wind instruments comprise trumpets, tubes, flutes, flageolets, panpipes, and whistles. The instruments designated as belonging to the flute class are all blown over an aperture along the side and are thus differentiated here from members of the flageolet class which are all blown at the one extremity. Furthermore, independently of size, flutes and flageolets are distinguishable from trumpets and tubes by the possession of two or more ventholes. According to the sounds required, these ventholes can be closed with the fingers. Many instruments may be used as "music" proper on occasions of festivity and ceremonial, and yet be employed for signal purposes, and, with the exception of the jangling seed capsules, all musical instruments would seem to be the perquisites of the sterner sex.

556. Wind instruments.—Of the trumpet and tube class, first and foremost are the clay instruments described by Gumilla, close upon a couple of centuries ago, from the Orinoco. These were certain clay tubes, one vara long, with two or three hollow bellies (pl. 158 B), their convexities being larger in the former case. The mouthpiece was narrow, and the opposite extremity fairly wide, and the sound emitted was very deep, like a bassoon. These two varieties were sounded in pairs, and employed by the Saliva at their funeral ceremonies, where, as stated by the good Spanish father, they proved very suitable for rendering gloomy the minds of the participants (G, I, 192). In later times, on the River Atabapo, upper Orinoco, we find Humboldt speaking of the botuto or trumpet of baked earth in which a tube 3 or 4 feet long communicates with several barrels (AVH, II, 345), while on the River Cassiquiare, the connecting stream between the Amazon and Orinoco watersheds, he talks of the soldiers calling the Indians together by the sound of the horn, or a botuto of baked earth, whenever any hostile attack was dreaded (AVH, II, 405). It is noteworthy that on the Atabapo the same distinguished traveler speaks of the botuto as the sacred trumpet, an object of veneration, from all the ceremonies of worship of which the women were excluded (AVH, II, 363), the ceremonies referred to being doubtless what were known on the Rio Negro as those of Jurupari. Similarly shaped clay trumpets have continued in use up to the present day among the Carib and Akawai. I obtained several specimens of both shapes—the two and three bellied—all gaily deco-

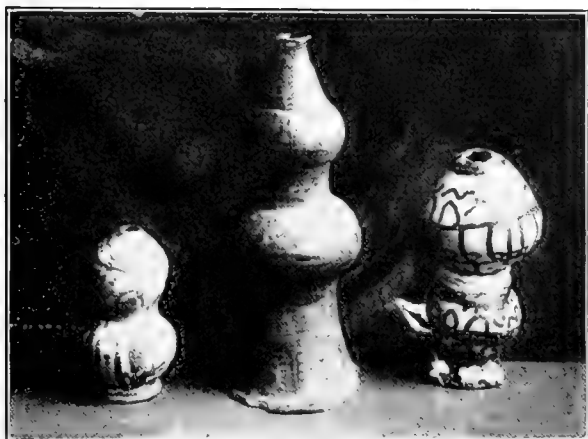
rated (pl. 159), from the Moruca River Carib, who speak of them as kodi, the present generation remembering their elders using them for signaling purposes. It was on this same river that Schomburgk also came across them among the Warrau. He tells us how they were manufactured from burnt clay, hollow, and had a peculiar shape like a figure 8. Both extremities were open, and at one end was a sort of mouthpiece (SR, II, 447). This object may have been more or less identical with the sounding trumpet of Cayenne "made of two pieces, fixed together with bindweed" (PBA, 181), and with the double-funnel shaped clay wind instrument recorded by Kappler from Surinam (AK, 186).

557. Gumilla describes another class of clay instrument among the same people (Saliva). This was made of long pieces of cane the extremities of which were inserted in a large empty jar (pl. 158 B) of special manufacture (G, I, 192). In an illustration (G, I, 184), but without description, he depicts an Indian blowing into a tube held in the mouth of a comparatively large jar (pl. 160 B), an apparatus practically identical with the present-day roarer (pl. 160 A) of the Jaguar dance met with on the upper Rio Negro (KG, I, 135).

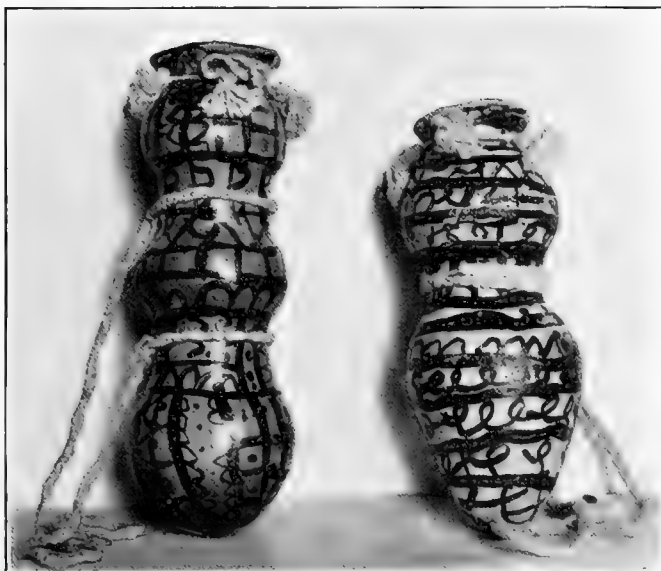
558. Another trumpet, recorded by Gumilla from among the Orinoco Indians, was made of bark, and would appear to have been also brought into requisition at certain funeral ceremonies. He says that it had a length of two varas. It must, indeed, have proved cumbersome, since the performer had to be assisted by a person in front supporting on his two shoulders the projecting sticks attached along either side of it. An idea of its size may be gauged when we learn that the open end of the instrument could hardly be covered with a fair-sized plate. The material of which it was made was a bark called majagua, sticky like glue when fresh and admitting of being bent like paper. An examination of the original illustration (pl. 158 B) shows that the bark was wound in a spiral (G, I, 192-196). Similar bark trumpets were in later years met with by Wallace and by Spruce (pl. 161 C) among the Uaupes River Indians. One evening there was a caxiri drinking . . . Presently appeared eight Indians, each playing on a great bassoon-looking instrument. They had four pairs of different sizes and produced a wild and pleasing sound. They blew them all together, tolerably in concert, to a simple tune, and showed more taste for music than I had yet seen displayed among these people. The instruments are made of bark spirally twisted, and with a mouthpiece of leaves. In the evening I went to the Malocca and found two old men playing on the largest of the instruments. They waved them about in a singular manner, vertically and sidewise, accompanied by corresponding contortions of the body, and played a long while in a regular tune, accompanying each other very correctly. From the moment the music was first



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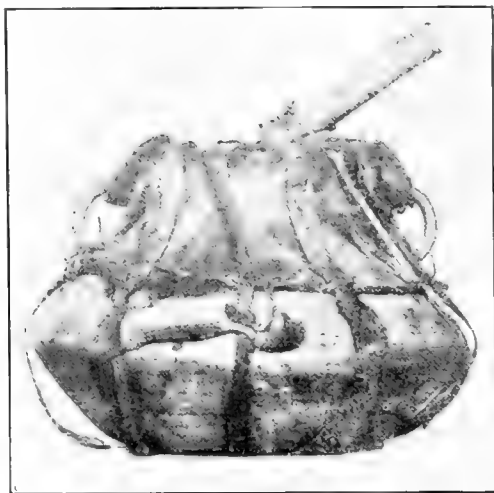
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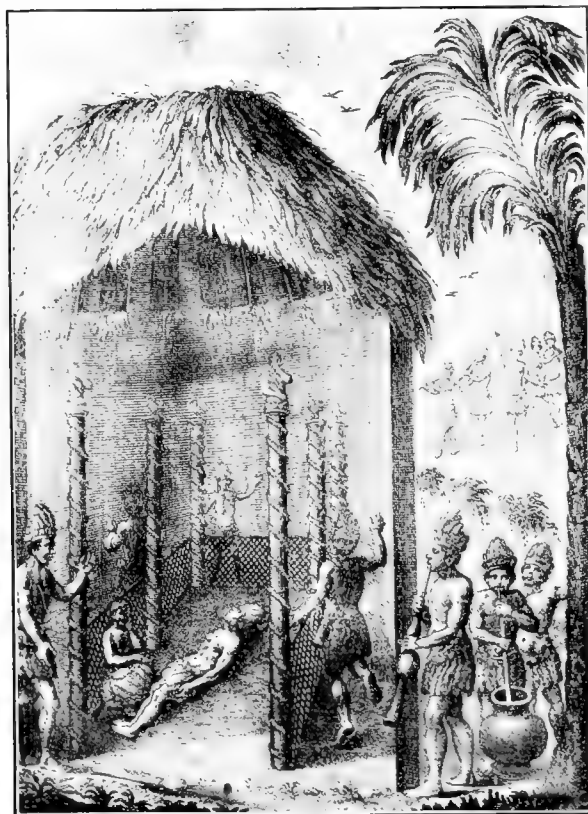
C

CLAY TRUMPETS

A, B, Two views of two-bellied clay trumpets. The first and third specimens are from the Moruca River Carib. (Georgetown Museum.) *C*, Three-bellied and two-bellied clay trumpets. Moruca River Carib. (Bankfield Museum, Halifax, England.)



A, The "roarer" used in the Jaguar dance. The tube is tied into the jar for better resonance. (After Koch-Grünberg.)



B, The dead Saliva. Note the two wind instruments played by the two figures on the right: the one is a roarer, the other a reed instrument. (After Gumilla.)

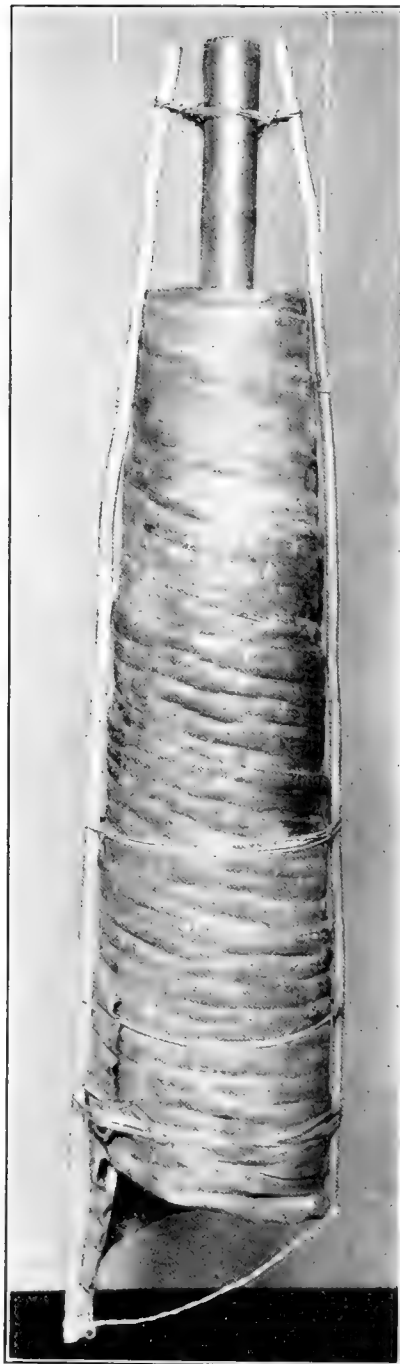
CLAY ROARERS; REED INSTRUMENTS



A



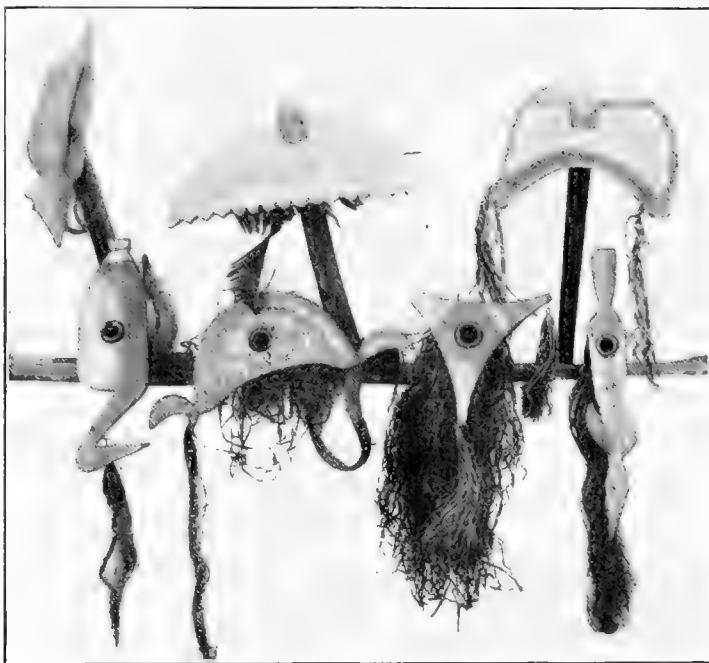
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C

BARK AND WOODEN TRUMPETS

A. Bark trumpet from the Rio Tiquié. (After Koch-Grünberg.) B, Wooden tube from the Rio Aiary. (After Koch-Grünberg.) C, Bark trumpet from the Rio Uaupes. (Kew Museum.)



A



B

WOODEN TUBES INSERTED IN CARVED EFFIGIES OF ANIMALS, BIRDS, ETC., TO BE USED AT THE PARISHARA DANCES. MAKUSI

A, Front view; B, back view. (Georgetown Museum.)

heard not a female, old or young, was to be seen, for it is one of the strangest superstitions of the Uaupes Indians that they consider it so dangerous for a woman ever to see one of these instruments that having done so she is punished with death, generally by poison. Even should the view be perfectly accidental, or should there be only a suspicion that the proscribed articles have been seen, no mercy is shown; and it is said that fathers have been the executioners of their own daughters and husbands of their wives when such has been the case (ARW, 241-242). The trumpet illustrated in plate 161 C was collected some fifty-odd years ago by Spruce (RS, II, 416) and is now in the Kew Museum. It is 46 inches long and 9 inches at the middle. [The two white cords have only been attached to steady it while the picture was taken. The photo was obtained for me by the director, Sir D. Prain, who also kindly forwarded the following copy of the descriptive note which accompanies the exhibit: "Jurupari," or Devil—Musical instrument used among the Indians on Rio Uaupes (a tributary of the Rio Negro), South America, at their feasts. They are objects of great veneration among the Indians, and are never permitted to be seen by women. So stringent is this law that any woman obtaining a sight of one is put to death, usually by poison. No youths are allowed to use them until they have been subjected to a series of initiatory fastings and scourgings. The instruments are kept hidden in the bed of some stream deep in the forest, at which no one dares to drink or bathe. At feasts they are brought out at nights and blown outside the house of entertainment. The interior consists of portions of the paxiuba palm (*Socratea durissima* H. Wendl.), which, when about to be used, has the upper end nearly closed with clay and a piece of uaruma leaf (one of the arrow-root family) tied on above the square hole so as to form a monster flageolet. These tubes are wrapped round with long strips of the tough bark of the iebaru (*Eperua grandiflora* Bth.), which descends in folds below the tube, thus forming a sort of trumpet to be blown into at the upper end.] The most recent mention of these bark trumpets from the same localities as Wallace, e. g., Rio Tiquié, is by Koch-Grünberg, who figures them (pl. 161 A) on identical lines with Gumilla, save that the two sticks do not project beyond the mouth of the instrument. This author also confirms their connection with the Jurupari festival, and the care with which they are removed from the sight of the women and children (KG, I, 314, etc.). Large bark trumpets made of bark spirally may be seen in Wapishana, Taruma, Waiwai, and Parikuta settlements. They are manufactured outside of the village, but the women are not forbidden to see them (JO).

559. Wooden tubes were also originally described by Gumilla from the Orinoco. He speaks of certain "flutes" (*flautas*) used at wed-

dings among the Guayquire and Mapoye. These were more than 2 yards (*varas*) long, made of a certain black bamboo (*caña*), which they called cubarro. In truth these "flutes" were in pitch and had a sweet consonance when played in pairs, not less than when two violins, one for tenor and one for contra-alto, are played (G, I, 161). In the upper Rio Negro area the wooden tubes are from 1 to 1½ meters long, made of the *Iriartea exorrhiza* and manufactured in pairs, which are more or less attuned. They are known as yapurutu on the River Aiary (KG, I, 85-89). The most important of these instruments, however, are used at the Jurupari ceremonies, as mentioned by Wallace and Koch-Grünberg, the latter of whom supplies an illustration (pl. 161 B). The former describes how they are made of bamboos or pipe-stems hollowed out, some with trumpet-shaped mouths of bark and with mouth holes of clay and leaf. Each pair of instruments gives a distinct note, and they produce a rather agreeable concert, something resembling clarionets and bassoons (ARW, 348).

In the Wapishana, Makusi, and Patamona country I have seen long wooden tubes (pl. 162 A, B), some of them painted with rings of red or black, inserted at their ends through holes cut in flat pieces of wood which were carved in various shapes to represent animals, birds, etc. (sec. 590). Used at the Parishara and other dances, they are waved from side to side, and front to back, simultaneously as they are blown, and the resulting sound is very characteristic.

The Warrau and Carib of the Moruca and upper Pomeroon Rivers, respectively, may use a signal trumpet which is but the cut-off stump of a comparatively large bamboo, open at one extremity, the septum at the other being pierced for a mouthpiece. It is practically a wooden trumpet or tube cut very short. The Warrau call it horésemo-i, and the Carib matábo. On the Aiary (KG., I, 92) and Apaporis (KG., II, 312) Rivers are to be found short decorated wooden trumpets tapering down toward the mouth end. On the Tiquie, a branch of the Rio Negro, there is a similar stumpy wooden implement but of a curious double-funnel shape with a flattened central portion carved to fit the hand (KG, I, 261).

An unusual form of instrument is the dance trumpet of the Içana and Aiary Rivers (pl. 163 A) with a neck made of iriarte palm, and the funnel of basketry covered with pitch (KG, I, 198).

An interesting example of a natural form applied to trumpets and tubes is the hollow leafstalk of the papaw tree, which I have often seen Indian children blowing trumpetwise.

560. Flutes are usually made from some form of bamboo. Those from the Coastal Akawai and Carib that I have had an opportunity of examining were from 60 to 70 cm. long. In the case of the bamboo, the instrument comprises two complete segments of the palm,

their connecting septum being partially removed by means of a longitudinal opening in the outer surface, which aperture is subsequently plugged. Some three or four holes are drilled into this closed cylinder below the divided septum, that intended for the mouth being above it and markedly larger. It is stated that these instruments could occasionally be played upon by breathing into them through the nose (CC, 48). Opinion seems to differ as to the quality of the music derivable from them. Speaking of certain Indians seen in Demerara, probably Arawak, Dr. Pinckard talks of one of them having in his hand a piece of a large and coarse reed, nearly 2 feet long, with two or three holes cut in it like a flute. With this, we did prevail upon him to blow a few harsh and simple notes; and these he seemed to consider very superior to all the varied sounds of the German flute which was played to him by one of the officers; for he refused to accept the flute in exchange for his reed (Pnk, II, 153). St. Clair describes these instruments as each having four notes (StC, I, 328). They also make a kind of flute of the bamboo called quama [kuamma=bamboo], which, however, only produces three



FIG. 234.—Taruma flutes.

notes, and very much resembles the howling of a dog in distress (BE, 45). In Surinam they had a kind of flute called too-too, made of a single piece of thick reed, on which they make a sound no better than the lowing of an ox (St, I, 393). The present-day Pomeeroon Warrau call it harri-harri, which seems to have become corrupted by others into awiarri, while the local Carib express it by the Spanish term of bandola. They may be played in pairs. The Wapishana, Makusi, and Patamona have a more carefully manufactured instrument cut from a long-joint bamboo so as to include two septa, thus avoiding the necessity for perforating any intermediate one (pl. 163 B). This particular bamboo comes from the Essequibo below the Rappu Falls. The instrument is not used for dancing purposes. It is known as kir-mu (Wapishana), akai-kara (Makusi), etc. The Taruma, Parikuta, etc., have their instruments decorated in red and black patterns, painted thereon (fig. 234). Both ends are closed, either naturally or artificially. Like the Akawai and Carib already mentioned, the Taruma occasionally blow these flutes with the nose. The Waiwai and Parikuta invariably do so (JO). The Oyana also play their flutes with the nose (GOE, pl. VII, fig. 11).

561. A curious form of flute is used by the Carib and Warrau older men, though its origin in the Moruca River district is generally ascribed to the former, who call it kuamma, after the particular bamboo out of which it is manufactured. The Warrau name it kamuatta for similar reasons, but they can specify the instrument as a whole as a "blower" or wannisemo-i. The bamboo is of a comparatively thicker species than that from which the harri-harri (sec. 560) is derived, the article itself being further distinguishable by being constructed of only one segment. More than this, the mouthpiece is in the form of a more or less longitudinal slit, and on the opposite side of the cylinder is a large semiconcave venthole, the size of which is varied by the raising or lowering of the outer portion of the performer's right hand, which is placed over it (fig.

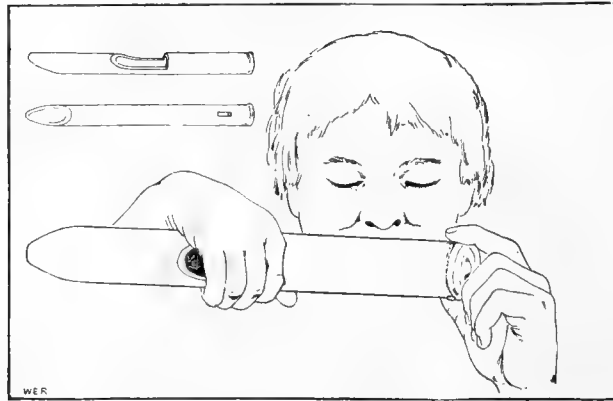
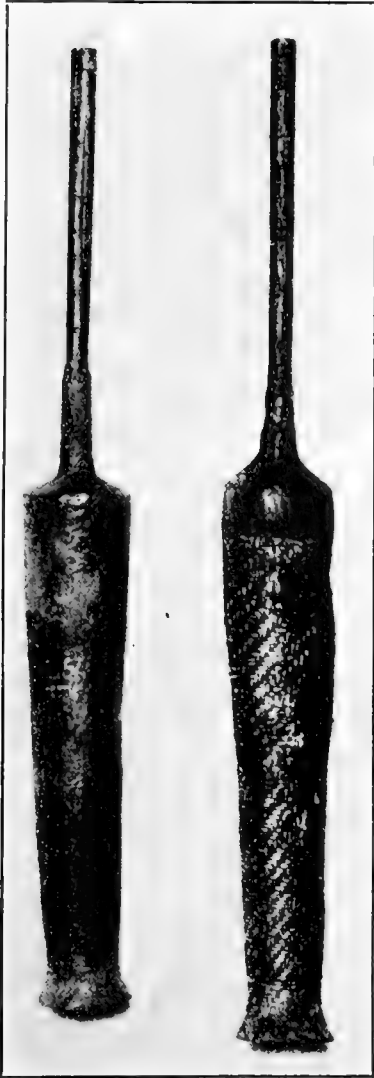
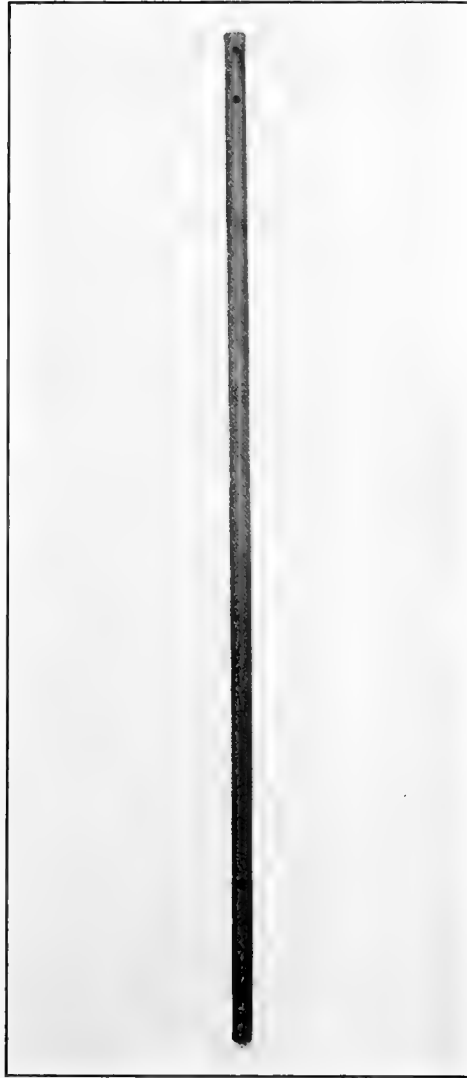
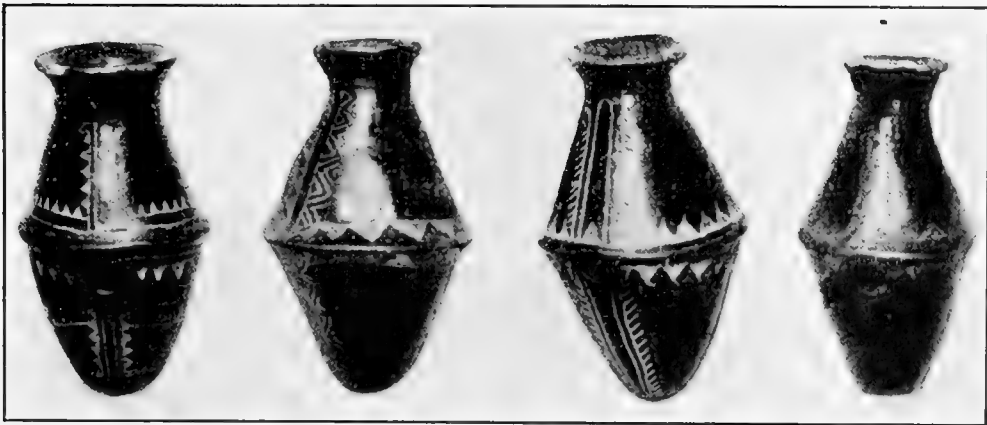


FIG. 235.—Method of blowing the Wannisemo-i flute.

235). The proximal end of the instrument is closed, but that of the distal open and truncated. Whether ever employed for musical purposes it is now difficult to say. It is certainly at present used for signaling from the waterside upon near approach to a settlement. In either case it is not an easy thing to blow with the proper modulation, dependent upon the delicate adjustment of the hand just referred to. The Oyana have a flute with somewhat similar mouthpiece, and a quill inserted at proximal extremity (GOE, pl. vii, fig. 12).

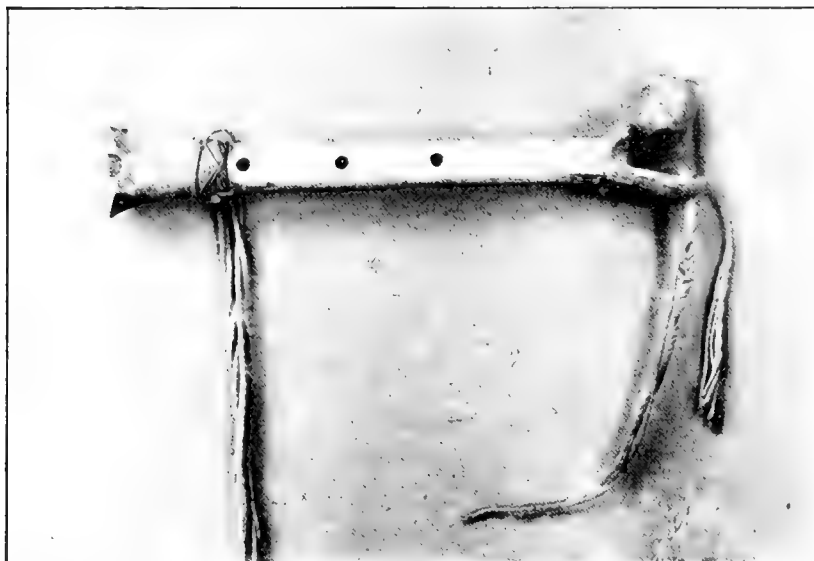
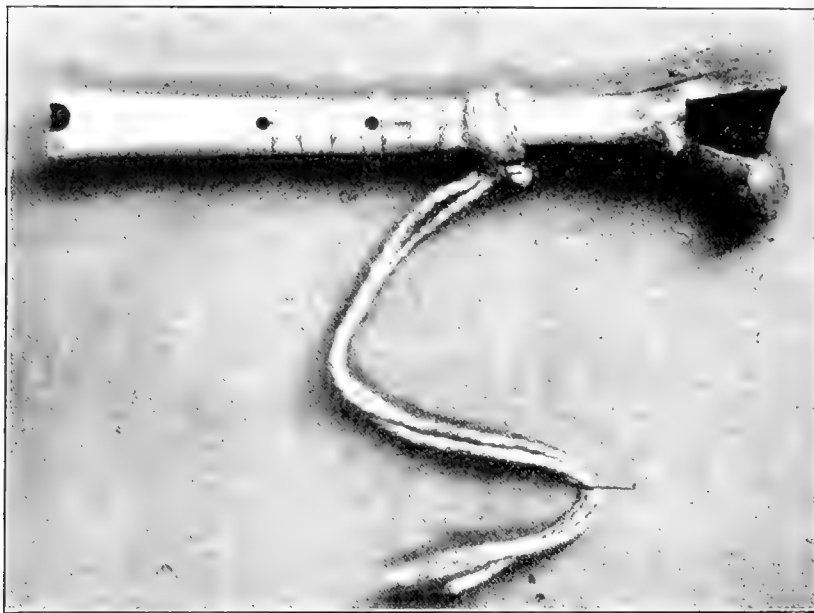
562. A clay flute of somewhat peculiar shape, decorated with an incised yellow-filled pattern (pl. 163 C), is used both for musical and signaling purposes on the Rio Tiquie (KG, i, 259).

563. The Taruma, Waiwai, and Parikuta flageolet type of musical instrument, cut from a cane or bamboo segment, and decorated in various patterns by scarifying with a glowing-hot vine rope—not painted like their flutes—are of two shapes according as the distal

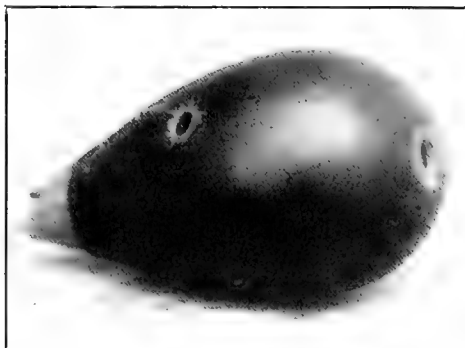
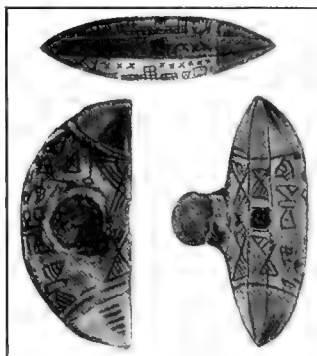
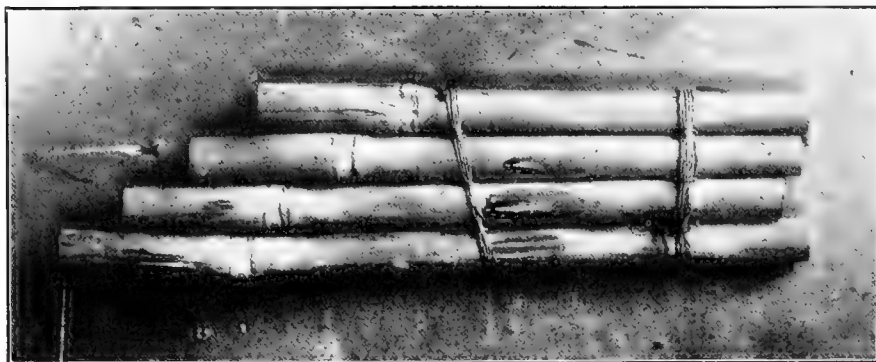
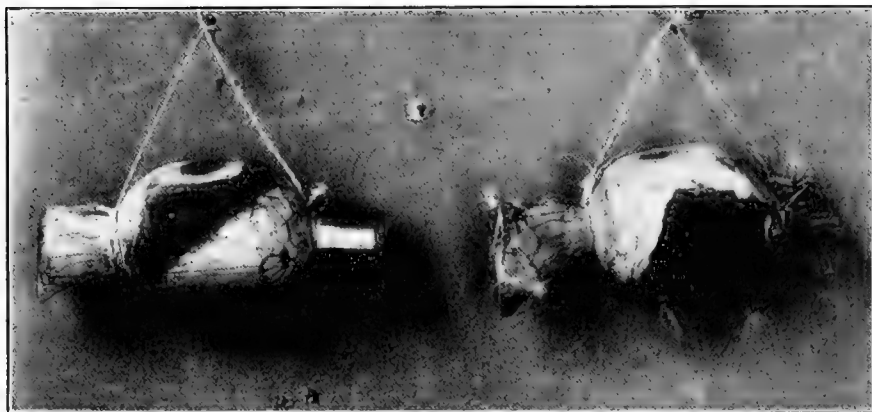
*A**B**C*

BASKETRY TRUMPETS; BAMBOO AND CLAY FLUTES

A, Dance trumpet made of basketry covered with pitch. (After Koch-Grünberg.) *B*, Flute made from a long-joint bamboo so as to include two septa. *C*, Clay flutes from the Rio Tiquié. (After Koch-Grünberg.)

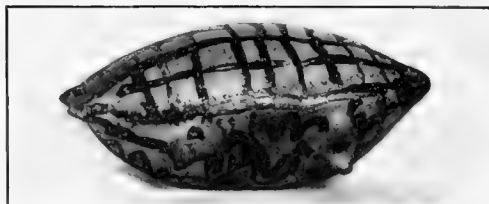


BONE FLAGEOLETS

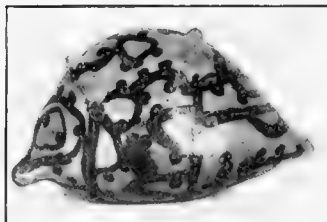
*A**B**C**D*

OKARINA-LIKE FLUTE, PANPIPE, AND WHISTLES

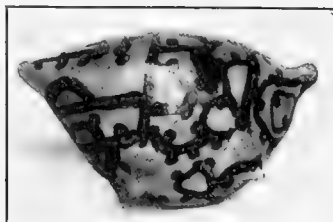
A, Pear-shaped gourd flageolet. Moruca River. *B*, Wooden whistle with gourd acting as sounding box. Waiwai and Parikuta. *C*, Patamona panpipe. *D*, Wooden whistle, representing a savanna ploverlike bird, used at the Makuari dances.



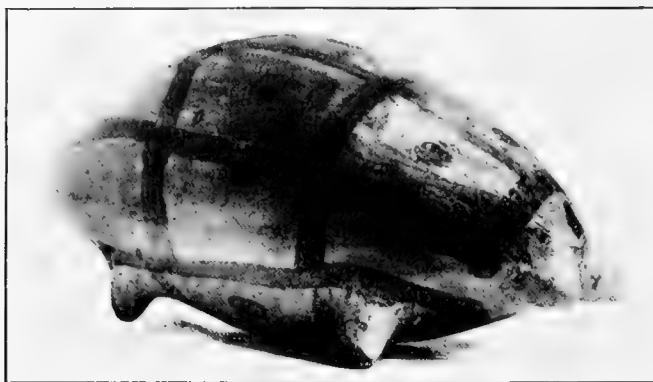
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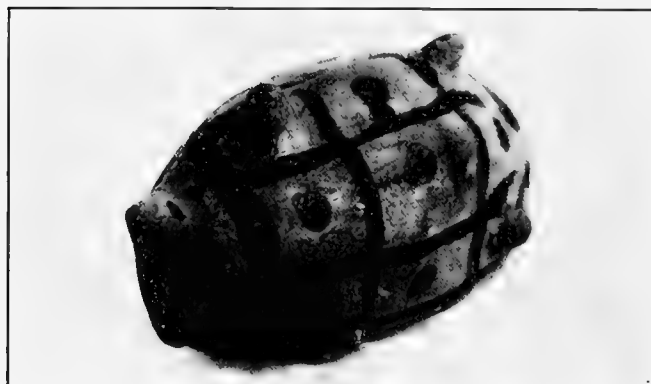
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E



F

CLAY WHISTLES

A, Turtle. Carib. (Bankfield Museum, Halifax, England.) B, Frog. (Bankfield Museum.) C, D, Turtle. Carib. (Georgetown Museum.) E, Frog. Taruma.

end is truncated (fig. 236, C, D) or carved into a "tail" (A, B). In the former case, which is so cut that a septum is left in situ about its center, the septum is centrally perforated and the ventholes drilled below it. In the latter there is a wax partition inserted within the instrument between the second and third ventholes. This artificial diaphragm has either a single large central perforation, the general

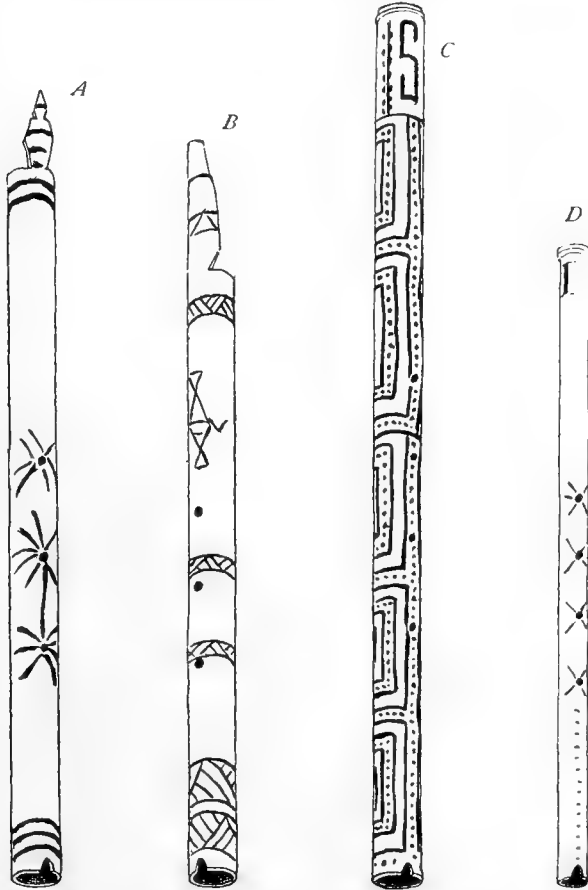


FIG. 236.—Flageolets. A, Taruma; B, C, Waiwai and Parikuta; D, Parikuta.

condition, or occasionally (Taruma) a small central one surrounded by four others. Some of the Parikuta instruments (fig. 236 D) have two longitudinal slits, one on each side, near their distal extremities (JO). Bamboo flageolets also come from the Trio and Oyana (GOE, pl. vii, fig. 9).

564. Certain limb bones of various animals—e. g., jaguar, dog, tapir, deer—may be utilized for bone flageolets (pl. 164). The medullary contents of such a bone will be scraped and picked out

through an aperture at one extremity, the latter being then nicked and shaped, as required, with beeswax, etc., so as to form a suitable mouthpiece. Three or four holes, drilled in its length, limit the number of notes obtainable. It was often alleged that these so-called "flutes" were manufactured from the bones of their human enemies. They were sometimes ornamented with gravings, filled black or red, and at the present time are often to be seen decorated with plaited cotton tassels. Such instruments are met with throughout the Guianas. The Waiwai had a great reputation for making them (Cou, II, 379). As with the cane flageolet types, they have a perforated wax diaphragm inserted.

565. There is a pear-shaped gourd, about $3\frac{1}{4}$ to 4 inches long, found on the Moruca and its tributaries which, from its fancied resemblance

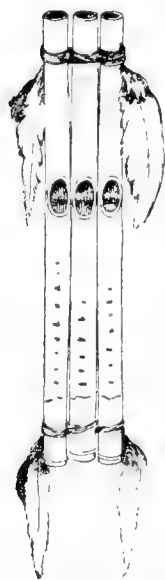


FIG. 237.—Parikuta panpipe.

to a crow's skull, is called bure-akwa by the local Warrau. These people make a flageolet of it (pl. 165 A), under that name, by cutting off the smaller extremity, whence the contents are removed by rotting with water and nicking it to make a mouthpiece. A small aperture is next made in the center of the larger end of the gourd, and another about halfway between the latter and the mouthpiece. According as these are kept open or closed by the forefingers of either hand, so are variations produced in the note. Warrau have told me that it is played by men on occasions of festivity, notwithstanding their admission that the sound produced is a sorrowful one, reminding them of the days of long ago "when they left their girls behind in Trinidad." (*sic*) as one old man took particular care to explain. To me it looks much like an okarina of the music shops.

566. Panpipes (pl. 165 C) have been met with from one extremity of the Guianas to the other, from Cayenne (PBA, 181) to the Orinoco and Rio Negro (KG, I, 91). In Surinam the instrument was known as a quarta (St, I, 393); in our own colony it is known as kimiti to the Patamona (Ti, Dec. '89, p. 300), tilélé to the Wapishana (Cou, II, 312), etc.; on the Amazons the Caishána and other tribes call it mimbeu after the umbrella or fife bird (*Cephalopterus ornatus*), whose notes it is supposed to resemble (HWB, 321, 368). The instrument is usually made of from 3 to 10, or perhaps more, pieces of arrow grass, reed, etc., of the same diameter cut into different lengths, but the toy specimens which I have observed among the Warrau of the Moruca are manufactured of similar lengths, yet of varying diameters. The Parikuta may build them of three pieces

(fig. 237), apparently of similar size and shape, and each with a venthole (JO).

567. The hard seed capsules of certain plants may be drilled and emptied of their contents, so as to admit of their use as whistles (KG, I, 302). At the Makuari funeral dance of the Arawak, whistles (pl. 165 D), carved out of wood (to represent a savanna ploverlike bird, the purukúri, noted for its characteristic whistling note), were blown to signal each new arrival at the landing stage up to the house (sec. 844). The Waiwai and Parikuta have an interesting form of whistle, also carved out of wood, about $3\frac{1}{2}$ inches long, where the blow-hole is in connection with a gourd which forms a kind of sounding box (pl. 165 B).

568. Among the playthings of the Carib children met with on the upper Manawarin (Moruca River) I have noted small painted clay figures representing turtles (pl. 166 A, C, D) and frogs (B). These are all hollow with a single aperture at the hinder extremity, which is blown across. Similar clay whistles, highly polished, and said to represent frogs, also come from the Taruma (E). These have two apertures, one on either side, at the base of a projecting rostrum on which the lip rests when blown upon. The few specimens that I have handled each had a fragment inside that rattled on shaking, but as to the nature of its material, or its purposeful or accidental presence, I can not express an opinion.

569. The skulls of various creatures—e. g., deer—can be transformed into whistles by covering with “pitch” and leaving open only the foramen magnum and anterior nasal aperture. They are thus met with on the Rio Negro (KG, I, 302; ARW, 351). The claw of the ant bear is similarly utilized by Wapishana, Makusi, etc., after limiting the size and shape of the base with wax.

570. We are again indebted to Gumilla for the record of a reed instrument from the Orinoco Indians of his day, a record all the more interesting in that its modern representative is met with among the present-day Warrau of the Moruca, people, be it remembered, whose original home was the swampland at the Orinoco mouth. He says: “The flutes (*baxones*) are of very simple construction. Taking a bamboo (*caña*) of 2 varas in length, all the partitions, except the last one within it, are broken through. In this last one they make a small slender tongue from a splinter of the same bamboo, without pulling it out from its place. So delicate is the splinter that it easily produces a sound when the instrument is blown at the upper end. But the tone of the sound varies with the size of the gourd with which they surround the last segment of the bamboo. This is affixed by making two holes in it, and calking and covering with wax. The hole at the end of the gourd which was originally

attached to its stalk is left open. According as the size of the gourd is larger or smaller, so is the sound either lower or higher pitched" (G, I, 202). From the context of the author's description (pl. 160 B) the instrument was apparently specially used at the funeral ceremonies. The present-day Warrau, on the other hand, used it at all or any of their dances. They call it *serór-e*, and manufacture it as follows (fig. 238): A circular wooden pencil (*p*) about 3 or 3½ inches

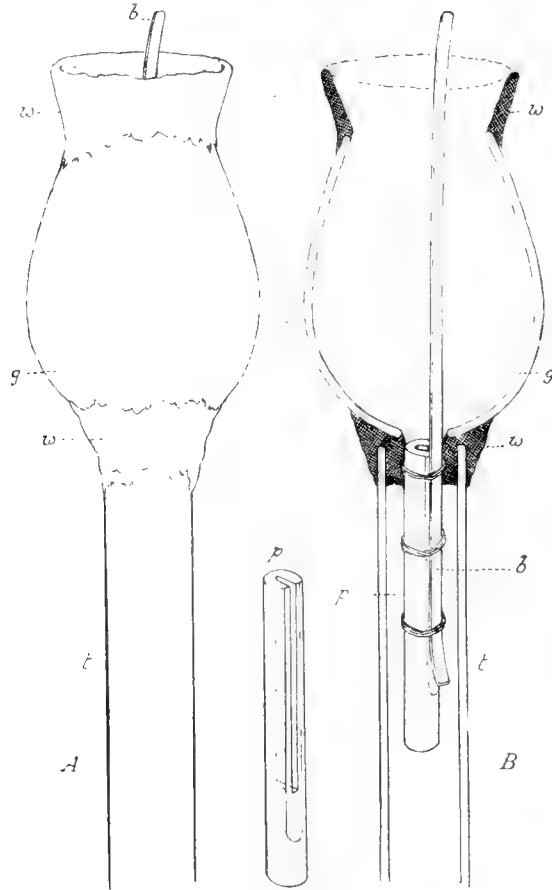


FIG. 238.—Manufacture of the serore reed instrument. *A*, Side view; *B*, section showing the excavated pencil (*p*), bamboo strip (*b*), pear-shaped gourd (*g*), beeswax (*w*), and tube (*t*).

long and one-half inch in diameter is gouged in a V-shaped groove for about two-thirds of its length, the area along which this cut is made being subsequently planed down flat. A thin delicate bamboo strip (*b*), some 7 or 8 inches long, is then tied onto the gouged excavated surface and along the flattened edges of this pencil, the proximal extremity of the strip being purposely bent slightly upward. A pear-shaped gourd, perforated at either extremity, is now

fixed at its larger end with a ring of beeswax (*w*) over the pencil, its smaller end being rendered funnel shaped by means of another ring of the same material. That portion of the pencil projecting from outside the gourd is next inclosed in a 2 or 3 foot length of trumpet wood (*t*), which in turn is attached to the base of the gourd, independently of the pencil, again with beeswax. The oboe described by Schomburgk as met with among the Warrau almost tallies with the description just given, save that no mention is made of any covering gourd. The passage referred to in his travels is this: As a matter of fact every Warrau settlement has its own music master, hoho-hit, who teaches the young boys and men of the place to blow on a kind of oboe made out of a longer or shorter piece of bamboo, into the upper end of which is spliced a thin reed made of cane with a longer or shorter glottis. The sound produced is very like that of the Russian national instrument. Almost every evening the young men collect around their teacher, and under his guidance hold a concert in the middle of the settlement. According to the size of the bamboo stem and its reed, the height or depth of the sound varies. A movement of the hand, a nod with the head, or a time beat with the instrument from the side of the hoho-hit to that of the musicians, either to commence or to chime in, regulates the whole concert. Although . . . each instrument only gives one note, the musical director knows the tone of the combined instruments so exactly, and gives his directions so correctly, that a basis of harmony rules the sound, just as those Russian players perform the most difficult pieces with their reeds (SR, I, 152). A somewhat similar reed instrument is found among the Waiwai (JO). Fermin, in French Guiana, talks of flutes which are close upon 2½ feet long, have only a single hole, and for mouthpiece a reed like the "haut boy" so that but one note results (FE, 89). And on the lower Amazons, there is the *turé*, a horn made of long and thick bamboo, with a split reed in the mouthpiece. This is the war trumpet of many tribes of Indians, with which the sentinels of predatory hordes, mounted on a lofty tree, give the signal for attack to their comrades (HWB, 184).

571. Hilhouse drew attention to what may be called a stringed instrument among the Warrau: "This general dancing was merely stamping round in a ring to a simple monotonous song by the women, accompanied by beating on a monochord, being the skin of the arm of an ite leaf, raised by a bridge from the pith" (HiB, 329). I have obtained from the old Moruca River Warrau a monochord, known to them and to the Arawak as *tarimba* (fig. 239 C), where the ite leafstalk of the instrument above described is replaced by a length of arrowgrass and its raised fiber by a strong piece of *kuraua* twine.

At one extremity of the stick, about 4 feet long, a circular peg is inserted at right angles, while the twine, firmly attached at the other extremity, is wound around it, the turning of the peg, one way or the other, increasing or decreasing the tension as may be considered desirable. A bridge is inserted at the peg end, though it may have another, but much smaller, at the mouth end. To perform with it the instrument is held horizontally, somewhat after the manner of a toy jew's-harp, to the left of the performer, its free end clenched between the two sets of teeth and supported at a spot about two-thirds of its length by the left hand. With a small wooden plectrum, held in the right hand, the chord is now twanged in close proximity to the mouth, while the sound itself may be modulated not only by the opening and the closing of the lips, but also by alterations in the length of vibrated

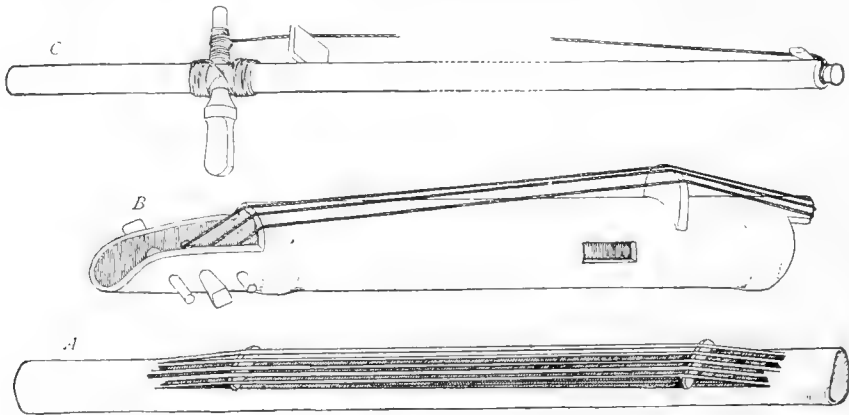


FIG. 239.—Musical stringed instruments. A, The aeolian; B, native-made violin; C, the tarimba.

string according as the pressure upon it with the left hand is shifted outward or inward. The tarimba may, however, have had an African origin, or have been modified by African influences, it being hardly distinguishable, except for the bow being straight, from what was known to the Negroes of Havana (Cuba) as bamba (A, I, 376), to those of Cayenne as ventan (PBA, 192), and to those of Surinam as benta. Stedman describes the last mentioned as a branch bent like a bow by means of a slip of dry reed or warrimbo, which cord, when held by the teeth, is beaten with a short stick and by being shifted backward and forward sounds not unlike a jew's-harp (St, II, 287). Among the Wapishana, etc., Coudreau mentions the yaté, a kind of bow of which the string, tolerably resonant, sets in motion (*agite*) a calabash at one of its extremities (Cou, II, 312). Concerning this instrument Mr. Melville of Dadanawa, Upper Rupununi, writes me as follows: "The musical instrument you mention as seen by Coudreau was quite common among the Atorai when I came here first,

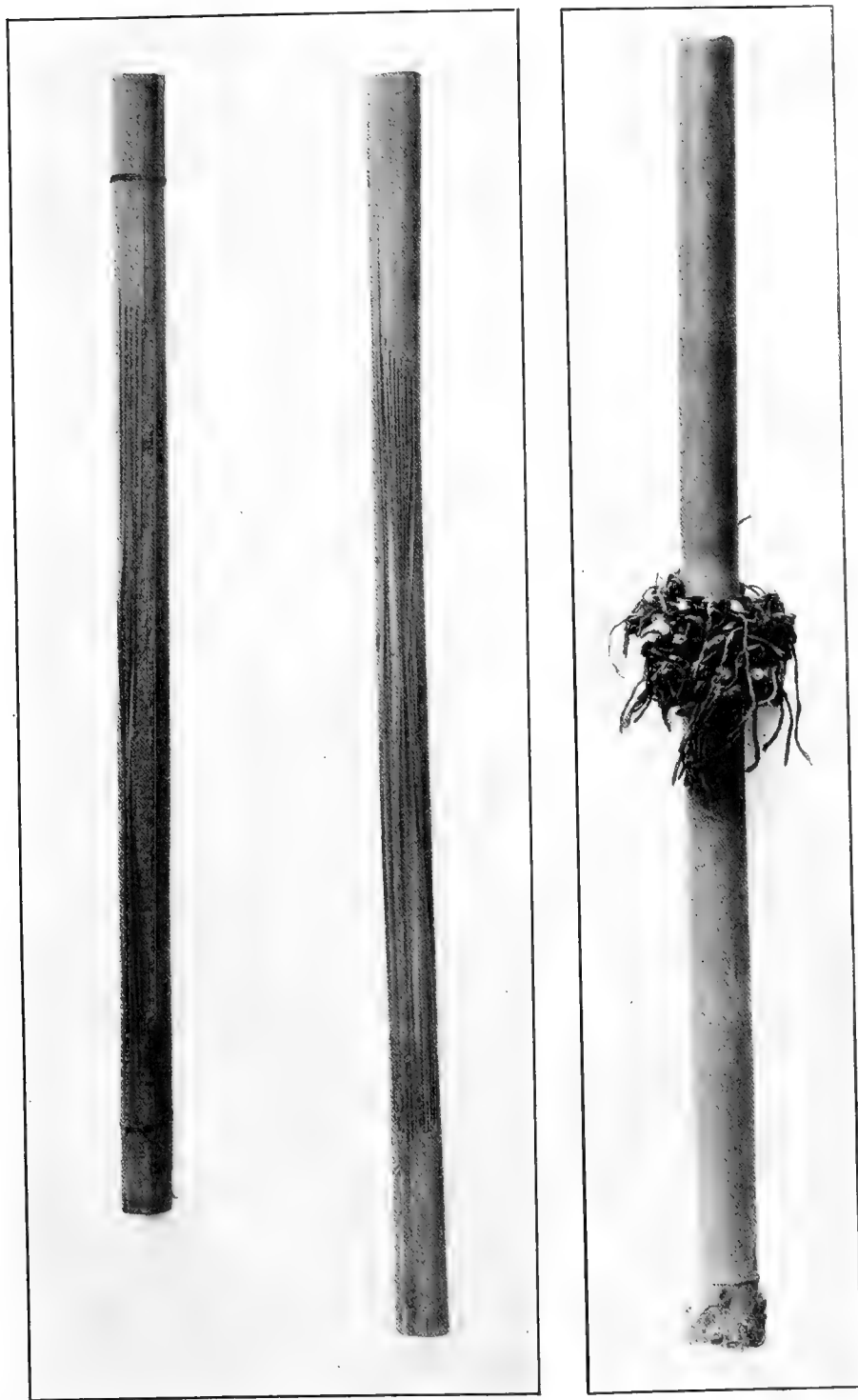
some 28 years ago. It was a bow about 4 feet long with the string drawn very taut, and a gourd or calabash fixed to end in such a way that the string passed through a narrow slot cut in the gourd, emitted a fairly loud note when struck with the finger. I can not remember a special name for it other than the general term of samuru, applied to all such instruments. Yaté is neither a Wapishana or Atorai word. The thing could easily be of African origin; e. g., escaped slaves from Brazil." The Carib Islanders had a kind of instrument (*une forme d'orgues*) made of gourds upon which they placed a cord made of the string of a reed called pite; and this cord, being touched, made a sound which they thought delightful (RO, 509).

572. Hilhouse was also the first to record what he describes as a "viol." By raising the fibers of the arm [of an ite leaf] and placing a bridge under, they [Warrau] made a rude kind of viol (pl. 167 A), to the music of which they danced (HiC, 239). At Tapa-cooma, in the Pomeroon district, some 80 years ago, Alexander induced the Arawak to play their simple viol with three strings (A, I, 132). At Quatata village, on the Pirara River, Brown saw what he calls an aeolian musical instrument, of Indian manufacture, composed of three large leafstalks of the ite palm, stuck upright in the ground, a portion of the hard outer part of which was cut longitudinally in three parts and raised on a bridge like the strings of a fiddle. The wind blowing through these produced very sweet but mournful musical sounds (BB, 266). Appun also makes mention of such a musical appliance in the same district (App, II, 404). Among the Makusi, similar instruments, but with a bridge at either end (fig. 239 A), were said to be fastened upright on the tops of the houses (Ti, Dec., 1884, p. 250). A curious up-to-date development, commonly met with among the more civilized Pomeroon and other Indians, is a native-made violin (fig. 239 B), combining the features of the instruments just described with those of the European article. This is manufactured from a short length of thick bamboo, along which are stretched the three, sometimes four, kuraua-twine strings, attached to pegs, and raised from off the underlying convex surface by means of a bridge. Strong kuraua twine also keeps the bow bent. The squaking sounds to which this modern innovation gives rise will account for the Warrau calling this or any European violin by the onomatopœic term of sekke-sekke.

573. An undoubtedly indigenous form of rattle is the ceremonial spear-rattle (pl. 34 A) of the Desana and Tukano Indians of the Rio Tiquie where rounded pebbles are inserted, by means of two longitudinal slits, into the hollowed-out spindlelike enlargement at the distal extremity of the spear (KG, I, 345). Another is the bamboo, or other "hollow" wood, with contained stones. Thus, with the

Makusi at Pirara village on the head tributary of the Takutu, Schomburgk describes how the masters of ceremony had in their hands two large pieces of bamboo, the cavities of which were filled with small pebbles, and the outside surrounded with cotton hangings and feathers. They walked at the head of the dancing column, stamping at intervals with their bamboos on the ground, by which a rattling noise was caused, women and men accompanying the same with a monotonous song (ScG, 257). The "shak-shak," i. e., shake-shake, of Creoles, Negroes, and civilized Indians is a hollowed-out globular or egg-shaped gourd with a short stick passed through it and containing small pebbles or hard seeds. The Arawak call it maraka and are credited by legend (WER, VI, sec. 185) and otherwise (G. I, 155) with having introduced it into the Guianas, throughout the entire extent of which it is to be met. The gourd is often highly decorated and may have feathers and streamers, etc., attached (pl. 168 A, B). Among the Wapishana and neighboring tribes the handle may be triangular in section and notched along the edges. A double form of shak-shak has been described by Crévaux from Atures village, a Guahibo settlement: A dumb-bell (*haltère*) with hollow balls containing hard seeds. In the Hauyari dance of the Arawak, held at a female's death, the handle of the shak-shak reached a length of 5 or 6 feet, the extremity of which, prodded into the ground while marching along, caused the gourd to rattle. The ordinary short-handled form of maraka used at the common dances is probably independent of the similar African instrument, a like remark applying to the indigenous "magic shell" or calabash of the medicine men (WER, VI, sec. 289), which can usually be distinguished by its comparatively much larger size and various purposely made longitudinal and horizontal slits. These apertures are, of course, not for the insertion of the contained quartz crystals, etc., which are put in at the handle openings previous to the handle. Rattles, as children's toys, are discussed elsewhere (sec. 620).

574. I am obliged to employ the term "bells," for want of a better, to describe certain apparatus composed of hard-shelled seed pods, beetle wing-cases, various animals' hoofs, and other articles, the clinking together of which gives rise to more or less agreeable sounds. They may be attached from the neck, waist, arms, or legs. In the case of seeds, it would appear that the particular plant from which they are derived has only in one instance been scientifically identified, i. e., the *Thevetia neriifolia* Juss. All other examples in which seeds are recorded as employed for this purpose only furnish us with local names. Kawa seeds can be strung on cotton thread, which may be tied to sticks or hollow cylinders (sec. 576). The cerehu or cerewu

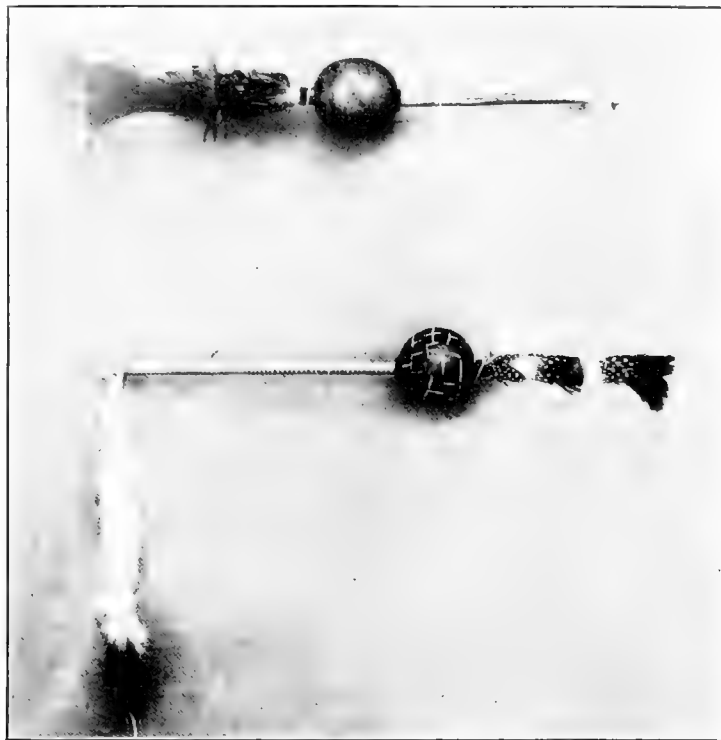


A

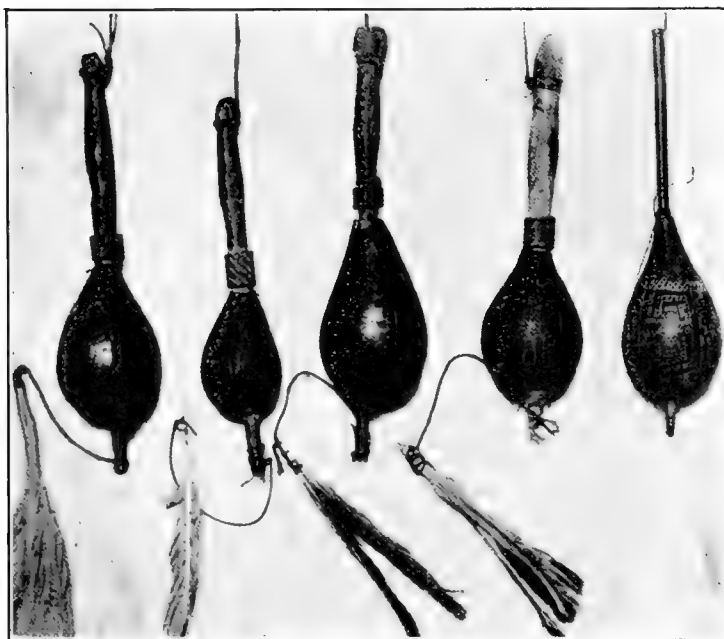
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AEOLIAN MUSICAL INSTRUMENTS; DANCE STICK

A, Aeolian musical instruments made from stalks of ite palm leaf. In both cases the bridge has been lost. Warrau. B, Dance stick.

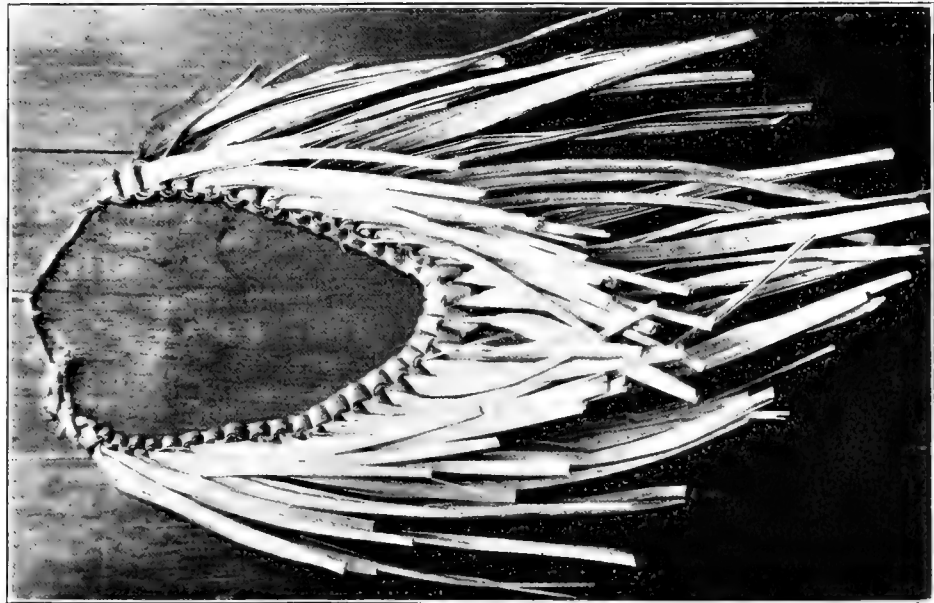


A, Wapishana rattles with triangular section and notched handles.

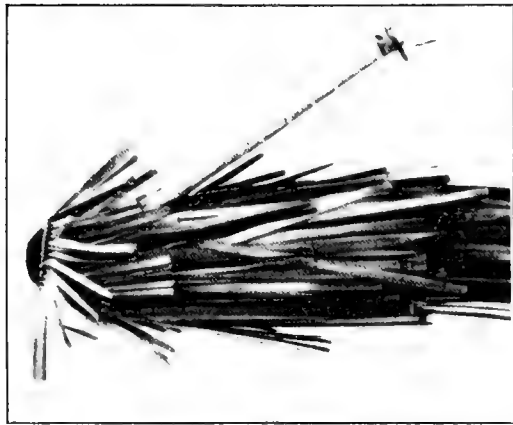


B, Dance rattles from the Aiary River. (After Koch-Grünberg.)

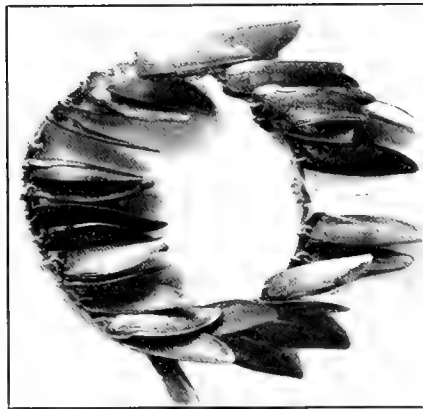
RATTLES



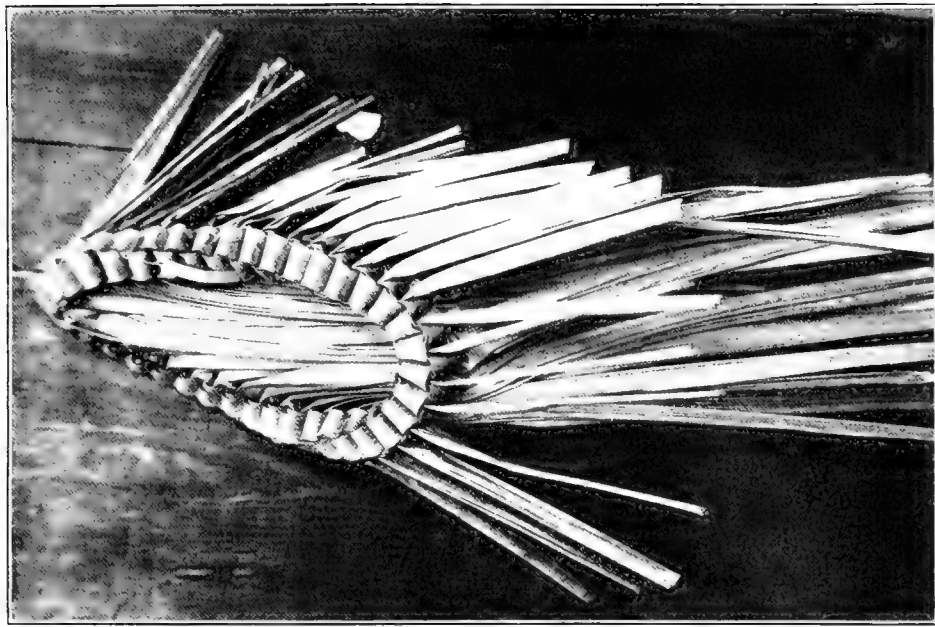
A



B



C



D

PARISHARA COSTUMES; BEETLE-WING "TINKLER"

A, Par. huanes (Lace), Georgetown Museum.) B, Dancer in the Parishara dance, (Photograph by J. Ogilvie.) C, Par. huanes (Lace), Georgetown Museum.) D, Par. huanes (Lace), Georgetown Museum.)



SKIN DRUMS

grows to the size of a cashew. It is with the dry empty shells, strung together on a network of string and tied below the knees, that the Indians in their dances mark time to the music (Da, 331). The shells of the caruna nuts [? wild cashew] are separated from the kernel and scoured with ashes, etc., to free them from any noxious quality, and are then strung on strings and fastened round the ankles of the Indian dancers at their festivals (BA, 98). The little bells (*grelots*) are made of the hollowed-out nuts of a fruit called ahouai, which they [in Cayenne] fix sufficiently close to one another to make a tinkling sound (FE, 89). They may be hung on garters (PBA, 195), or they may be attached to a staff and thus shaken (PBA, 200), as in an illustration given by Crévaux of a Roucouyenne dance (Cr, 101).

575. In various areas throughout the Guianas the scintillating wing cases of the Buprestis beetle are threaded on cotton and tied to the strings hanging from the back of the necklaces—e. g., Wapishana and Makusi—or fixed around the ankles, below the knees, etc., of the male dancers. They may also be attached around a ring (pl. 169 D) and this, in turn, suspended from a back or arm ornament. Such wing cases are employed not only as ornaments, but for tintinabulatory purposes with each stamping movement. Women do not adorn themselves with these articles as a rule. Of other animal products turned to use as bells note should be made of the hoofs of water haas, bush hog, and tapir. The Trio and others may employ the beaks of the toucan (GOE, pl. II, fig. 3) for similar purposes.

576. Hollow cylinders, upward of 3 feet long, made of trumpet wood (*Cecropia*), bamboo, etc., are used for striking the ground to keep time for the dancing. Often, if not a bamboo, where the dividing segment can fulfill a corresponding purpose, a skin is attached over the lower end, and very commonly seed shells, etc., strung on a cord, are fixed around the upper extremity (pl. 167 B). I have seen them used by Wapishana, Makusi, Patamona, and Arekuna. Local names are warrungga (Arekuna, Makusi), iiwan (Wapishana), etc. Brown records witnessing on the Massaruni a performance, where the participants were . . . preceded by a sort of drum major, armed with a hollow bamboo staff, which he held vertically and beat time with on the ground. To this bamboo were attached tassels made of seeds, the kernels of which rattled in their casings and the whole lot rattled against the hollow bamboo (BB, 69). These dance sticks seem to have reached their highest development of workmanship and ornamentation throughout the area drained by the upper Rio Negro (KG, I, 81, 202, 336; II, 83, 292), where the cylinder is not necessarily of the same diameter throughout, and may or may not be provided with a distinct handle, through cutting away por-

tions of the circumference. These are the modern counterpart of the painted sticks mentioned by Gumilla on the Orinoco. The Indians struck these sticks on the ground and thus beat time with the music (G, I, 193).

577. Columbus found drums among the natives (SR, II, 136). When Juan Ponce de Leon was attacking the Arawak Islanders at Porto Rico in 1510, mention is made of their war conchs and drums (WI, 785). These instruments are again recorded among the Carib Antilleans in the middle of the seventeenth century as made of a hollow tree with a skin stretched over one end only like a Basque drum (RO, 509). In the early part of last century, among the Arawak of the Corentyn, St. Clair recorded a drum made of part of a hollow tree, with a skin tied over it at one end (StC, I, 328). [And finally, during the seventies, at Mucaja village, on the River Mauhes, apparently among the Mundurucu on the Amazons, Brown and Lidstone speak of two drums made of long hollow logs, with skin stretched across one end only, upon which the drummers performed as they sat straddle-leg upon their reclining instruments (BL, 315).] The existence of such "one-sided" drums is indisputable and their relationship to the hollow cylinders with skin-covered end (sec. 576) a close one. At the same time it must not be forgotten that the Negroes had similar drums (St, II, 287).

578. In Gumilla's day the Orinoco Indians took to battle hand drums made like those of Europe, which also served them for their dances and days of feasting (G, II, 104), as is the case throughout at the present day. With the Makusi, Wapishana, etc., a man may carry it with him and on his return home signal on it. Differences in staccato and sustained strokes are recognized, as I have noticed among the Makusi. The body of the instrument is invariably made from the hollowed-out trunk of the tree itself after removal of the bark. One of the trees so utilized is the silverballi (*Nectandra* sp.); another is the karuhoho of the Arawak (identical with the simaruba of the Warrau and the muratatau of the Carib); and a third, the omu of the Warrau. Schomburgk says that in the neighborhood of Pirara the *Mauritia flexuosa* is employed. An 18-inch-long horizontal section is placed in water and the sap thus easily removed after a few days (SR, II, 136). It is possible, however, that he is in error, because the Warrau, who probably know more about the adaptability of this particular palm than any other Indians, assure me that it is an impossibility to utilize its timber after this fashion. The method of fixation of the two skins with hoops and cross string is similar to the European style (pl. 170). The one skin, the silent one, which is never struck, is crossed with a twisted string, which grips at its center a small wooden tongue, the "resounder" of the North

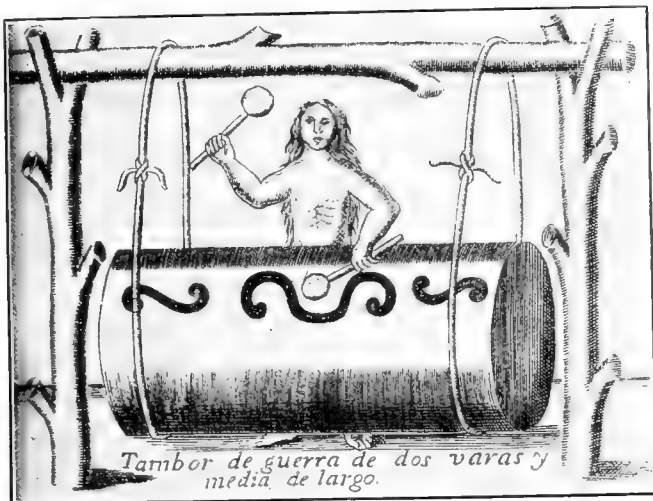
American Indian drums. I have also gathered from the Carib and Warrau that the only animals from which they prepare the skins nowadays are the bush hog, acouri, baboon, deer, and sloth, and that efforts are always made to cover the ends of the drum with different skins. An old Pomeroon Arawak has informed me that in the old days, among his own people, the business end of the drum was covered with baboon hide, while the silent extremity was closed with deerskin. The preparation of the skin consists in cleaning, scraping, stretching, rubbing with ashes, and drying in the sun. Both Warrau and Carib have also assured me that in the Pomeroon area the head of the drumstick used in the olden times to be made of the seed of the awarra palm. From what has already been mentioned about only one side of the drum being struck, it need cause no surprise that but one drumstick accompanies each instrument. This fact would appear to have been first noted by Schomburgk when he stated that he had never seen Indians with two drumsticks.

579. Koch-Grünberg is of opinion that the skin drum (a cylinder with two skins) is not originally Indian, but probably an old possession of the Carib stock from the time of the first arrival of the Europeans. In support of his contention he points out that the Umáua, a Carib people to the westward of the upper Rio Negro, speak of the drum as *tabulu*, a corruption of the Spanish *tambor* (KG, II, 123). It is true that the Wapishana speak of it as *samur*, while the Makusi and Pomeroon River Carib similarly call it *sambura*, a name also applied to an almost circular-shaped bay, once the site of a Carib Indian settlement (Br, 31) on the upper reaches of the river. So also do the Surinam Carib and Arawak call it *sambula* and *samulam*, respectively (PEN, I, 170). On the other hand, it should be remembered that the possession of a European name does not necessarily indicate European origin. For example, although the word *perro*, the Spanish for dog, is used by a large majority of the Indians, these animals were already met here at the time of the conquest. What is more probable is that the two-skin drum was introduced through the Arawak and Carib Islanders from North America since the European invasion. Such an hypothesis would account for its silent end, its resounder, and its generally Spanish name.

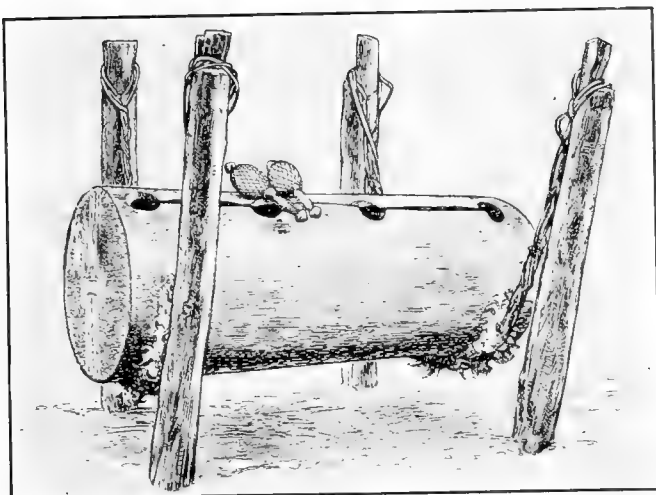
580. Place must be found here for the wooden drums—struck on the body, not on the ends—originally described from the western areas of the Guianas (pl. 171). Joest does not express himself clearly enough with regard to the big drums made of hollowed-out tree trunks in Surinam (WJ, 78) to allow of their being discussed here to any useful purpose. In the houses of the caciques, says Gumilla, there are fixed three poles in the form of a gallows (pl. 171 A). From the crosspiece on top, by means of two pliable vine ropes (*bejuco*) is

slung the drum at its two extremities, distant half a vara from the ground. The drum is a hollow tree-trunk, so huge that two men can hardly clasp it and three varas long, little more or less. It is complete in its whole circuit, and hollowed from one end to the other with fire and water. In the upper part they make their "skylights" . . . and in between they make a half-moon like a mouth. On the timber, which is in the center of the half-moon, a blow has to be struck with a club-headed stick to make it sound, because if struck anywhere else it sounds like a table or a door. Again, although it may be struck in the center of the half-moon, if it is not done with one or two mallets covered with a resin which they call *currucay* it won't sound. More than this, although struck with the mallets thus prepared, neither will it sound unless they fix with peramán cement, a pebblestone some 2 pounds in weight in the center of the drum below, exactly perpendicularly to the half-moon. . . . The noise can be heard 4 leagues distant, and our Indians say that the drums of the Caverre [Arawak stock], to whom the invention is attributed, can be heard farther (G, II, 101). Humboldt in more recent times came across a smaller but somewhat similar instrument higher up the Orinoco, at San Balthazar Mission, Atabapo River. This drum was a hollow cylinder of wood, 2 feet long and 18 inches thick. It was beaten with great masses of *dapicho* [caoutchouc], which served as drumsticks. It had openings which could be stopped by the hand at will to vary the sounds, and was fixed on two light supports (AVH, II, 345). In the early fifties Spruce came across the larger kinds in the Rio Negro district, but his account and illustrations did not see the light until another half century had passed, in 1908 (RS, II, 426). Coudreau met with them among the Tariana (Arawak stock) of the Uaupes (Cou, II, 162). It was left to Koch-Grünberg, however, to give us the most accurate records of the larger-sized instruments as met with at the present day among branches of the Betoya stock and among the Uitoto, on the Tiquie and other tributaries of the Rio Negro (KG, I, 254, 276; II, 291), where they may reach a length of up to $1\frac{3}{4}$ meters. This traveler also relates how the Uitoto beat two of these drums at a time (a large and a small one) both for signaling and dance purposes, and describes how an extempore substitute for them is devised when they are on the road (KG, II, 302-303).

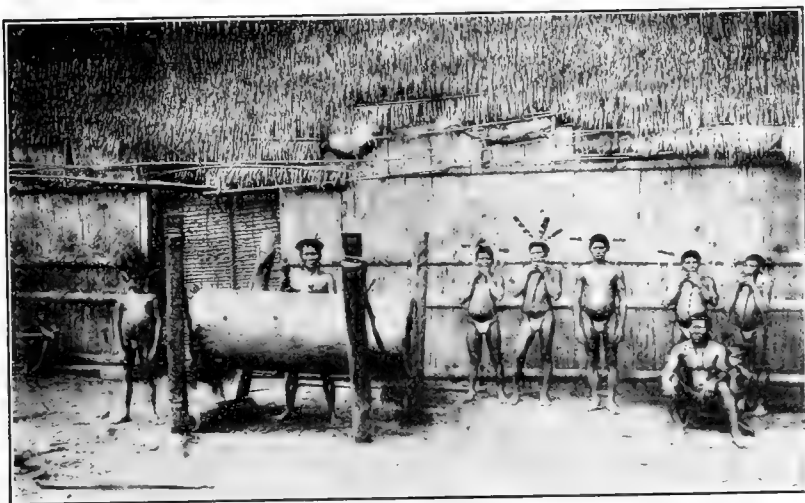
581. The Oyana had a primitive kind of drum struck with the feet, an apparatus mentioned both by Crévaux and De Goeje. The former describes it as a hole in the ground covered with a large sheet of bark, upon which the young men stamp rhythmically with the right leg, the left leg keeping the bark rigid and in place. With each movement they blow a short note on the bamboo trumpet (Cr, 245-250).



A



B



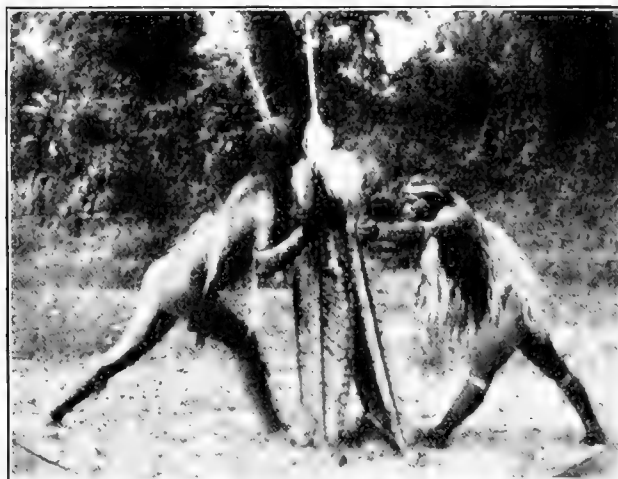
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WOODEN DRUMS

A, Of the Orinoco; early eighteenth century. (After Gumilla.)
 B, C, Of upper Rio Negro; present day. (After Koch-Grünberg.)



A, Maize cobs for playing ball. (Georgetown Museum.)



B, Shield game of the Warran. (From the Wide World Magazine, London, Jan., 1909.)



C, Playing ball at the Patamona village of Karikaparú.

BALL PLAY; SHIELD GAME

The latter speaks of a deep pit in which bundles of leaves from the *Maximiliana maripa* are laid. These are then covered with a board upon which earth is thrown, with the result that a dull resonant dancing floor is constructed (GO, 18). The Waiwai and Parikuta place a large plank over a hole in the ground. There is a small square hole cut into the side of the timber into which the dancers will vomit during the drinking and feasting. The planks are hewn from the spurs of certain forest trees, and may measure as much as 6 feet in length and 3 feet in breadth (JO). Attention might be drawn here to the sounding board on which "to keep time" at the Makuari death ceremony (sec. 846).

582. Finally, mention must be made of the so-called friction instruments, from which sounds are derived on lines similar to those which many a European youngster has amused himself with at the dinner table by rubbing his fingers around and around the edges of a glass finger bowl. From the Tiquie River there has been described and figured such a primitive instrument made from the entire shell of a land tortoise upon which, at one opening, some pitch is stuck. This is warmed and rubbed over with the hand (KG, I, 303). But to Wallace belongs the credit of being the first to mention these vibrating instruments of tortoise and turtle shell (ARW, 351). They are also met with among the Wapishana and Makusi (JO), as well as among the Oyana and Trio (GOE, pl. VII, fig. 14). Indeed, they are common throughout the Guianas.

CHAPTER XXIII

GAMES, SPORTS, AND AMUSEMENTS

Drink, dance, and debauchery (583).
 Dances restricted to special circumstances (584).
 Harvest dance (585).
 Humming-bird, parishara, etc., series of dances (586-590).
 Foot races (591); and remaining dances of the series (592).
 Dances with special apparatus, decorations (593); and without them (594).
 Females and dancing (595).
 Words of certain songs (596, 597).
 Story telling (598-601).
 Ball, play (602-606).
 Wrestling (607); and shield game (608).
 Children's games: Bows and arrows (609, 610); charades (611); wax and clay modeling (612); hide and seek (613); dolls (614); tops (615); blow-guns (616); catchers (617); stilts (618); buzzers (619); rattles (620); leaf-strand figures (621); water games (622).

583. Every Indian party, from a private "social" to a public ceremonial, is practically a drinking bout, interspersed with more or less music, and its necessary corollary, a dance. The refusal of a drink is regarded as a willful sign of contempt, and may engender indelible distrust. But what are our [German] notorious drinking bouts as compared with those of the Guiana Indians! I saw men, says Schomburgk, emptying at one draught calabashes that certainly contained from 2 to 3 quarts, hurry off to a tree where they will squeeze in their stomachs so as to vomit its contents, and directly afterwards accept from the hand of the woman waiting for them the newly filled calabash, the contents of which they will again guzzle at one pull. In the drinking of paiwarri, the Indian is never satisfied, and here also the dance and song, if one can still apply that name to a dissolute row, continues until the intoxicating liquor is drained to the last drop (SR, I, 207). The majority of the dances bear certain relations with birds and animals after which they may be named, while not a few may be connected with human beings and spirits, but the exact nature of the connection or relationship is at present in many cases doubtful. In general terms it may be stated that without drink there is never any dancing, which will continue so long as the former lasts, and thus a dance may often continue a couple of nights, including the intervening day. The entertainment, whatever its nature, generally begins and ends with a deafening yell; in the

former case it may be done to exorcise the evil spirit and so prevent him spoiling the merrymaking (WER, vi, 197). The whole affair, furthermore, usually ends up with a sexual orgie, or, as Barrère naively puts it (PBR, 253), "to wind up, they all intermix." Sad to relate, however, this intermixing really occurred, as it still does, throughout the whole performance, so soon as the effects of the liquor are felt. Thus, Van Berkel says "In the meantime, I here (on the Berbice) found the old tag to be true that a drunken woman is an open door; because no sooner were their brains muddled with drink, and the shades of night had closed in, than all the dark places were turned by the couples into kennels, after which they would stealthily rejoin the dance, just as if nothing had happened (BER, 23).

584. Certain of the dances are, or rather were, restricted to special circumstances—*e. g.*, the Makuari and Haüyári, which were performed on occasions of death—though Brett states (Br, 158) that the former was not exclusively a funeral game (sec. 842). Another dance restricted to special circumstances was the Aru-hoho (*lit.*, cassava "sport") of the Warrau, a special festival or thank offering to the cassava, either for the bountiful harvest it had supplied them with or to insure its abundance, the festivities taking the usual form of a dance, song, drinking, and sexual bout. Apparently with similar objects in view are the extraordinary Yurupari or Jurupari mask dances, etc., met with on the Amazon stream and its tributaries (HWP, 381–382; KG, I, 186–187), dances which, it has been suggested by one observer, came in from the islands with the Arawak, and by them were carried through the Guianas, as they were driven westward by their conquerors (KGF, 58). It was Jurupari who organized the dabucuris or whip fêtes, with a flogging of the women by men, and vice versa. Six of these were held in the course of the year in conjunction with the ripening of six particular fruits from which intoxicating drinks were prepared. Coudreau has left a very interesting account of the festival (Cou, II, 181–191). On the other hand, the opinion of another traveler would seem to be that the object of the fête was sexual (KG, II, 272, 293), and the fact of the men wearing the girls' hair that had been cut at their first menstruation is apparently absolute proof to him of the connection between this festival and puberty (KG, II, 253); but in this opinion I do not concur.

585. The absence of any description of the Aruhoho festival dance throughout the literature may accordingly make the following account of it, obtained from Warrau sources, all the more interesting. When the cassava is ripe the men will go to sea and catch crabs, while the women, remaining behind, will make cake and drinks out

of the new cassava. These cakes, for this occasion only, are made small, but very thick, up to as much as $1\frac{1}{2}$ inches, and are known as no-arra, the ordinary kind for everyday use being called aru. Upon the men's return the women boil the crabs and place the food in readiness for them and their friends. This food is arranged on any large leaves—a cake and two crabs for each person—extending in a circle around the house. When the meal is over the leaves are all collected and cleared away and then the dancing and drinking commence. The people now all form themselves into a ring, and into the ground in their center is stuck an arrow with the tip pointing upward upon which is stuck a wooden baby-doll. A young man and woman are next placed within the center of the circle vis-à-vis, but separated by the arrow. The woman has her hands folded over her little piece of apron with toes apart and heels together. Her dancing consists in alternately shuffling one foot forward and outward, but keeping in one place all the time. The man must have a new hammock folded behind the buttocks, with the ends, passing in front under the armpits, emerging from behind and over the opposite shoulders, and then tied below the neck. He locks his fingers together across the lower part of his chest. The dance which he has to perform is to slightly raise each foot alternately, at the same time shifting his position a step or two backward, and then forward again simultaneously, with a very suggestive fore and aft movement at the hips. More than this, both of them have to look at one another, or rather stare each other out, without any movement of eye or mouth whatsoever. The slightest sign of a laugh will disqualify either participant, who is thereupon bundled out of the ring. The ordeal is not an easy one, because the people around are all the time making naughty remarks and exerting their very utmost to raise a titter. And whenever one or other fails, the crowd shouts out something to this effect: “Hi-e! (*lit.*, Hoorah!) that man (woman) is no good. He (she) will never get a wife (husband).” The place of the person thus ignominiously turned out of the ring is immediately taken by another man or woman as the case may be. The one that can keep stolid enough sufficiently long, without showing even a suspicion of a smile, is thereupon greeted as a good person, and as deserving of a helpmate. During the performance, music is supplied by two masters of ceremony, stationed within the ring, but at opposite sides of it, playing on the serore reed (sec. 570). These two are the only people who don a special feather headdress; all the others, male and female, wear but the ordinary cotton forehead band. They subsequently move gradually round and round the circle, with a two-step, the others, male and female, following in Indian file, each holding a staff or stick, which, struck on the ground,

serves to beat time. The following is the song with which the Warrau accompany their Aruhoho dance:

Hiatu moku-moku nevikarié.	Undergrowth small cut-down.
Donu-sanuka siborori.	Sparrows-little siborori.
Kohôko nehurehure buakata.	Ears carefully intently; <i>i. e.</i> , listen attentively.
Nevikarié!	Cut-down (the bushes, etc.).
Aru-sanuka karuriani ho-ho-ho-ho, etc.	Cassava-little we-dance ho-ho-ho-ho, etc.
Kauri waka nakaitehi oriwakaiyani.	Sporting, etc., for-to-day we rejoice.
Aru-sanuka karuriani.	Cassava-little we-dance.
Hâke tametakuri inarerate.	To-morrow this-time quiet.
Wihi witu onate.	Species-of-Pigeon then cry.

"Cut down the undergrowth (so as to make a good field). There is the little sparrow, the siborori. Listen carefully, (so as to sing just as nicely as he does). Cut away the bushes. We are dancing, sporting, etc., with only a little cassava. Sing ho-ho-ho-ho, etc. How glad we are that the sport was fixed for to-day. We are sporting with only a little cassava. By this time to-morrow everything will be quiet. The pigeon alone will then be making a noise."

586. The humming-bird dance, that of the bird which is so closely associated in Indian folklore with the medicine man (WER, VI, sec. 350), would seem to be introductory to a series of other dances; e. g., parishara, and performances devoted to some special circumstance or occasion, the significance of which has been lost. Further inquiry leads to the belief that the observances, accoutèrments, etc., of one particular series have become merged into those of another, with the result that the whole set of performances is now more or less curtailed. Again, as might have been expected, certain items of a series have received greater and perhaps correspondingly unnecessary importance at the hands of travelers than have others. It is only since the above was written, and the results of certain of Penard's researches made known to me, that some definite order and arrangement has been recognized in connection with the series of dances, variously performed, known collectively as the humming-bird (owing to its being the preliminary opening one of the several to follow) and practiced by many of the tribes, both of Carib and Arawak stock. The bird in question is called tukusi (Surinam Carib), tukui (Makusi), bimitti (Arawak), etc., and hence the name of the performance will vary with the tribe and locality. It was danced at the larger festivities at those times of the year when the cassava was ripe and plentiful enough to insure sufficient liquor, and when whole villages would invite one another for a general or rather communal drinking bout, pure and simple. It had apparently nothing to do with any of the special ceremonial dances held at a birth,

death, marriage or adolescence, war, etc. Everybody was invited without distinction of nationality, and anyone who could do his share of the drinking was welcome. Two days prior to the feast the host turned into his hammock to receive his guests, who would now commence to arrive in companies. Each brought his own victuals with him and, as was the case at other large gatherings, each tribe raised a shout in the far distance to let its nationality be known. The Arawak yelled "Lokono!", the Carib "Kalinya!", etc. [A Surinam Carib performance is now being described.] Immediately after arrival each guest visited the host in his hammock, gave him the latest news, had a wash in the neighboring creek, and took a calabash of cassiri. It was only on the following day that the spree began. Young and old rigged themselves out in all sorts of strange fashions. The decorations, however, were not limited to the human beings, but extended to the accouterments and instruments, as well as to the tame monkeys and dogs. The women's costume was less elaborate than the men's; they wore less feathers but an abundance of seeds or beads. Even up to the present day no maid or woman dare surpass any young man in prettiness of costume. As soon as each guest had decorated himself, or been decorated to his satisfaction, which occupied several hours, the feast proper commenced with the humming-bird game or fight, which had for its object the honor of emptying the first calabashful of drink. Young men placed themselves in rows at fixed distances from one another on the trail that led to the hut in which stood the huge trough filled with the liquor and covered with palm leaves. A troupe of young people represented the humming birds, who, all fighting like these birds do, had to cut a way through the ranks of their comrades. Upon a nod from the host, the contest began. The young men raced ahead, but it was left only to a few to reach the hut, where they were received by women who, without any form of trial, tried to pour pepper in their eyes. At last one of the competitors hurled the palm-leaf covering off the trough, a deed of heroism that called forth loud applause. The victor was then offered the first drink . . . and the feast was opened. All the dancers commenced capering round the trough, giving utterance to a loud "hia-hia," followed by all kinds of sounds of animals and birds (PEN, I, 167-170).

587. This is how Rev. C. D. Dance describes the festival of the humming bird on the Demerara River, but, as will be seen, his relation deals chiefly with the racing and fight for the liquor. He certainly describes it as taking place on the same occasion as the Makuari, before the procedure of walking round the coffin, thus almost leading the reader to conclude that it formed part and parcel of the death ceremony, with which it has really nothing whatever to

do. He very probably only inserted it as an example of one of the many dances that might take place at any Indian gathering, provided the liquor held out sufficiently long to supply their wants. With no drink there is no dance. He continues: "A small banab was erected and well inclosed, and with one small door just sufficiently wide to admit one person at a time. In this banab there was a corial of paiwarri beer, well covered with the bark of the pump-wood tree, which was fastened down with strong cords. Within the banab, around the corial, to protect it was a guard of women, each with a calabash of pepper water mixed with cassava. At the entrance stood a man to prevent the ingress of him who was to force himself within, and to break away the pump-wood covering of the paiwarri corial. There was also a line of men each at about 20 yards distance, the line of men thus formed extending about half a mile from the banab, in which was the tightly covered paiwarri. Then about 20 competitors for the honor of breaking the cover of the corial, all besmeared with slimy matter, started at full speed toward the banab, within reach of each of the linemen. One of them, as leader, holds a maraka or shak-shak in his hand, and is bound to resign it to anyone of the runners who overtakes and passes him. The shak-shak must be in the hands of the foremost, who is not to seek to evade a wrestling with the linemen. Each of the men of the line opposes the holder of the maraka, who must fight his way or resign it to the next who passes. At last they arrive at the door; and if the holder of the maraka can successfully struggle with the doorkeeper and effect an entrance, he must contend with the women within who dash the mixture of pepper-water and cassava into his face, and rub it into his eyes while he, holding the maraka in his hand, is attempting to break away the covering of the corial. If in defiance of all these obstructions he successfully breaks the covering and tastes of the paiwarri beer, he is declared victor. A circle is then formed, of which he is the center, and they dance, singing in praise of his prowess. He is, until the next bimitti dance, the champion of bimitti" (Da, 273). There was a humming-bird, etc., dance among the Akawai of the upper Pomerook in 1907—the last occasion known to me of its having been performed in that district—when, instead of peppers, some plain water mixed with soot was thrown into the competitors' eyes.

588. During the course of my inquiries locally regarding the parishara dance among Makusi, Patamona, and Wapishana, where I invariably found it performed in connection with or subsequent to some variation of the humming-bird dance, I received much valuable information from Rev. Walter White, late of St. Mary's Mission, upper Rupununi River. As the result of our ob-

servations the following may be considered a fairly dependable account of the present-day Makusi festivities which seem to have a regular place in the Indian calendar about the end of December when, with the early rains, the supply of cassava is more or less at its best. A large brew, often several dozen gallons, having been prepared of the cassava drink, a start is made with the humming-bird dance, for which the performers are painted with white clay and decorated with gaudily-colored feather hat crowns. A Makusi gave me the following five verses of what are now sung and repeated ad lib. He assured me that he could remember no more unless I made him drunk. On the other hand, it is said that no one man can give all the verses, that no two men have all the verses alike, and that in many cases the words are extemporized. Even when intoxicated they do not get their words without constant prompting. The tepuru or master of ceremonies may assist. Here are the verses:

- i. Tawa ke wapurai menokai
 (greyish) clay with kaolin to mark
 To paint with white clay, kaolin.
- ii. Tawa chimoka i ya
 clay digs up he (sign of subject)
 He digs up clay.
- iii. Tawa-ri ke wataramingkai
 Clay-his with to paint up.
- iv. Tawa ke, tawa ke, i mota rāmingkai
 Clay with, clay with, his shoulder, to paint
- v. Wai-i wai-i yarakamu ya
 Gourd gourd I empty (sign of subject)
 I empty all the gourds.

589. Parishara is the name of a bird that builds a long dependent nest, but from the descriptions given me I have not been able to identify it. On different occasions I have been led to believe it to be a búnia (one of the mocking birds), a troupial, a crested manikin, a small blackbird variously colored. At any rate, the men who dance it daub their bodies, arms, and faces with kuari (Makusi), a black dye made from the fruit of a species of wild guava. From the split pinnules of the kokerit and perhaps other palms they plait crowns, necklaces, and skirts (sec. 551), and deck themselves up in them (pl. 169 A, B, C). The leaves of the crowns are in two rows, one pointing outward and the other downward over the forehead and round the head. Of course they are cut to a suitable length. The necklace of leaves hangs down over the chest, shoulders, and back as far as the waist, while the skirt hangs around, reaching to the knees and below them. The costume is decidedly effective as the parishara appear in the distance emerging from the forest or coming into view.

590. Arrived at the house where the drink is, the parishara dancers find that their hosts have already begun the tukui or humming-bird dance. The humming birds move to meet them, and two sets of dancers join and enter the house, forming an inner and an outer circle, the guests being inside. The tukui gives place to the parishara song, and after a while the tukui dancers may withdraw. The parishara dancers carry kawa or rattle strings (sec. 574), made of the seed cases of the kawa, fixed upon a plait of cotton suspended from a stick. This stick they hold in the right hand, sloping it outward to the shoulder, and jerk it at intervals, producing a sound which resembles the noise made by a species of cicad other than the "6 o'clock" bee. They carry in the left hand long, hollow cylinders through which they will now and again blow, producing a sound something like that of a bassoon. The cylinder may carry at its extremity the carved wooden effigies of some particular animal or bird (sec. 559). Several of such wooden effigies of animals, birds, and fish are recorded from the upper Rio Negro (KG, II, 154, 163-165). On occasion, however, the tubes may be used and not the special dresses. Now the parishara dance and song proceed. The former is nothing more than a regular stepping and stamping around in a circle, reversing the direction from time to time. The women join in the dance, resting their right hands upon the men's left shoulders. At intervals the master of the ceremonies gives the sign for the drink to be handed around, and the women distribute it in calabashes, but he must keep his wits about him, for even some of the women may be too drunk to attend to their duties. At the end of each verse of the song, which is sung in a droning voice, the verse being repeated from 20 to 30 times to form one song stanza, there is the blowing of flutes and whistles, a sort of cheering, cries of hoi, hoi, hoi . . . and the repetition of the name parishara. When I can assure the reader that I have watched and taken part in a parishara dance in the Patamona country for upward of 19 hours at a stretch the number of times that each verse is repeated will doubtless be appreciated. The words of the parishara song that I listened to were as follows:

As the visitors come up to the house, they sing:

- i. Komama kinokinope apáta seporiné.
Late afternoon Bunia your place crowding.

As they enter the house, they continue:

- ii. Kamuraka monatá.
scissor-tail bird's door.
- iii. Werper makai-iporo uipúi.
Hill Mountain I come from.
- iv. Uipúi uipúi yamotarúai tuwénase
I come I come up-and down gully
Kurekeru neserúase.
flute, trumpet, singing.
- v. Kurekeru yaper kabe wiyepuiwá.
flute clean up we are coming.

- vi. Yaranda maruperkō wai-ili sakutūi.
 Gorge gully flute are cutting.
- vii. Uyewakerma machunepúi machunepúi woi-o woi-o.
 glad [at your] coming [at your] coming [is the] "fire-fire" bird
- viii. Wamain yatunapōka. uipúi wotto-wotto.
 tube, trumpet sounding, is coming sp. of bush-hog.
- ix. Wamai wamai karuata wai-ili wamai wamai
 trumpets another sp. bush-hog [is coming] tube trumpets.
- x. Kurekeru yatirirō wakerirō yúnepui wotto-wotto
 trumpet tree from which trumpet is made. good brings bush-hog
- xi. Wamai yapō yunepui wotto-wotto.
 trumpet branch (for making it) brings bush-hog.

Finis.

When all the drink is consumed, which at times may not be until the end of two or three days, the dance being continued in relays, the parishara visitors return to their own settlement or village and prepare another drink. The above visit was an invitation to return the call, and their hosts returned it with interest.

591. A high specialization of a portion of the festivities associated with a communal drinking bout, characterized by its preliminary humming-bird dance, is noticeable in the Makusi kaka or foot races that were originally drawn attention to by Im Thurn. Among the Makusi on the savannas he says that the paiwarri feasts are generally accompanied by foot races. The racers, who wear collars made of long white heron's feathers or of black powis feathers, start, not abreast, but one behind the other, as in the bumping boat races of English universities (IT, 325). The men smear their faces, arms, legs, and bodies with tawa or clay of a light gray color. They don their crowns of bright feathers, fix the kawa seeds around their waists, so that they may have music wherever they go, and blow the small flute at intervals. The run is generally not less than 10 miles, often it is 20; so they start before daybreak. The first runner to arrive is called the wampang. Outside the house where the drink is stored the men of the receiving party stand, and as the runners come in they seize them round the waist and attempt to lift them perpendicularly clear off the ground. In reality it is a wrestling match, but not comparable with those of the salutation observances (secs. 607, 608, 811). The runners' object is to break away from the catchers awaiting them and to force entry into the house. Often there is a prolonged wrestling for the mastery, and often the runners are too exhausted, especially if the final spurt has been up a hill, to offer any fight. Occasionally one of the runners makes a clean rush up to the house and through the doorway. He dips his finger into a bowl of the drink and tastes it, when the women then take the bowl and dash the contents over him, pelting him with earth also. All this is evidently the modern counterpart of the fighting, struggling, and "peppering" to obtain the first hold on the drink, as originally described by Dance (sec. 587). It does not follow that

the wampang or first-comer is the one to force the entry. After the race there is a rest, while drink is handed round, and next the hosts welcome the runners with the tukui dance, in which all join. The runners generally get in at about 9 or 10 o'clock in the morning, and the humming-bird dance goes on for a time, perhaps to midday. The element of rivalry enters into these foot races, and as the winner becomes known as the strong man, his championship is challenged by men of other villages. In former days this led to a series of festivities during those latter months of the rains which might be called the harvest months. Early in the afternoon the runners go out and wash off the chalk and dress up with a tippet of black powis feathers, and substitute the maraka (rattle) for the kawa seeds. When the changes have been completed, they dance outside the drink house and round it before entering.

592. This dance, for which there are special songs, is called the warapang, a word which may signify another bird, but there is no certainty about it. The hosts join them in another dance, turning in and out among them. This other dance is the muruwa, a word which I believe may mean the troupial, another bird with a long, dependent nest. Here the dancers carry a long bamboo, around which are twined the kawa seeds, instruments known as warrungga (sec. 576), and these they strike on the ground. I agree with the opinion of my clerical collaborator in this series of songs that the words may be influenced by the nature of the country and the time of the year, for they sing of white quartz, water measurers, birds, beasts, fishes, trees, flowers, and take up almost the whole natural history of the place.

593. The difficulty of satisfactorily accounting for the inclusion and correlation of such apparently disconnected material in the subject matter of the song as a whole similarly meets us with the special objects and apparatus that may be brought into requisition for the due observance of the dance. Thus, in the tukui and parishara series one is at a loss to account for the occasional introduction of the head of a karuata (species of bush hog) carried in dancing procession, or for the perhaps more common headdress of howler-monkey skin for certain of the dancers. On the other hand, there is a probable explanation of their being remnants of the various animal dances still met with throughout the Guianas. One of the strangest of these among the old-time Surinam Carib was the general animal dance, where every performer, male and female, represented a different kind of animal or bird. Penard describes how each carried a stick with the head of an animal or bird on it, and had decorated himself besides with feathers or had painted himself. Men and women chased in and out amongst each other, and at the same time imitated the movements and cries of the kind of animal they rep-

resented. The deer sprang roundabout, the turtle crawled, the bush-hog stamped his trotters while, in a threatening manner, he shook his head at a maid who played the rôle of a parrot or dove. Suddenly all the performers raised strenuous cries of distress. An Indian, enveloped in a jaguar skin, or painted in imitation of one, sprang in between the company and tried to make away with a bush hog. In another quarter a boa constrictor was winding round a water haas. Then followed a great uproar, the performance being suspended for a while to give the women an opportunity for handing around the drinks. All the above and other dances of the good old times were executed in large houses which served besides for places of general assembly, where war and blood-revenge dances were executed (PEN, I, 173-174). Unfortunately, all these larger festivities are falling more and more into disuse. Then again there are certain dances in most of the tribes where men will display the so-called dance clubs, which have all the appearance of fighting weapons in miniature. The Wapishana speak of these dancing implements as *dru*; the Makusi differentiate the paddle from the block shaped ones (secs. 152, 153) as *putubang* and *taiké*, respectively. Whether the performances in which such dancing clubs, spears, and even shields are used are remnants of so-called war dances it is difficult to determine. Good descriptions of certain special dance apparatus and costume are recorded from the upper Rio Negro area. (See under "Tanz" in index to KG.)

594. The many dances, with no special ornaments, apparatus, or decorations, executed on occasions of ordinary festivity, and, apparently, in not a few cases, only imitative of the antics, movements, peculiarities, etc., of some particular animal, bird, or person, do not need very much more than passing allusion. As might have been expected, the "steps" will accordingly show variation, with the objects, etc., represented or signified, but often a more or less complicated movement will be met without a correspondingly adequate interpretation. In the case of the monkey dance (where notice is usually given to the house master beforehand so that everything breakable may be removed to a place of safety) the performers will jump and climb inside and out the dancing place until, what with the excitement and drink, they have to be tied up with ropes or in their hammocks, a duty customarily devolving upon the women. The following, handed to us through Brett, from the Warrau of the Corentyn, was intended to represent the antics of a herd of bush hogs: It was little more than a measured series of steps, accompanied with stamping, while the persons advanced or receded, sometimes in single rank, sometimes in two ranks facing each other, having their right arms over their right-hand neighbor's shoulders, and their

left arms round their left hand neighbor's waist, swaying their bodies to and fro. Occasionally the women would run in, and inserting themselves between the men, join in the dance. The effect was heightened by a monotonous chant sung in unison (Br, 320). In another series of dances of the Surinam Carib, and presumably likewise carried out without apparatus, there were imitations of the courtship of birds and animals. Specially remarkable was that of the turtle danced to an accompaniment of kicks, the chief performers creeping round just like two sea turtle canoodling one another. An other strange dance represented the courtship of the savanna deer, where a woman ran in circles round a man. Such a dance, performed by two people, was much appreciated, because every Indian, being well acquainted with the life history of the different denizens of the forest, could judge of the exact rendering (PEN, 1, 173). One observer says that the Indian dances, properly speaking, are only marches in which they strike with their feet (FE, 89); another in describing the Camo dances of the Otomac talks of a movement in three circles with hands joined—men in the first ring, the women behind, and the small fry in between (G, 1, 173).

595. Certain dances, though allowed to be viewed by a female audience, must not be indulged in by them. Says Humboldt: "We saw the Indians dance. The monotony of their dancing is increased by the women not daring to take part in it" (AVII, II, 448). Previous notice is given in the Kashadwákoli (Ar. male genitals), an obscene dance, to afford strangers and modest girls the opportunity of retiring. All who remain are supposed to be willing to enjoy the freedom and licentious gestures indulged in during this indecorous dance (Da, 273). On the other hand, in the mari-mari the women seem to constitute an essential feature, the method of single or double ranks, advancing, retiring or wheeling, and the manner of holding partners being very like that of the bush-hog dance just mentioned. This mari-mari, which I have seen performed by both Arawak and Warrau, is a name of which I have not been able to find the meaning. Though the dance and figure is always the same, different words are used as occasion requires, either between man and man, woman and man, or woman and woman, the subject matter being usually some piece of chaff or raillery.

596. While dancing, songs are always chanted, occasionally under the direction of a master of ceremonies. Certainly in the dances now dealt with—those performed without special apparatus, decoration, etc., on ordinary occasions of general festivity—the words of the song are characterized by their simplicity: "We are here, singing; we are here, dancing; to-morrow morning we will have a bath;

it is time for eating, etc." (Cr, 571). The following are some such Carib songs from the upper Pomeroun:

Akare wartoni lo-ia-u tona yaruta Alligator similar-to traveling creek
wutaupototo. head-of have-been-there.

i. e. Like an alligator, I have traveled to the creek-head.

Mekoro kunossa; Black (man) coming;
Ayewa manni: Kiss not:
Esamako! porré! Aside! far away!

i. e. There's a Negro coming. Don't kiss him. Get out of the way, far.

Towarikengko parmi sariwari: Singing like tiger:
parmi aiata: like powerful:
poponaka! aiawondake. stand-up face-to-face.

i. e. (You are) singing like a tiger, like (his) powerful (voice): stand up!
face-to-face (with me).

597. Among Arawak songs the following are mari-mari ones (sec. 595). They were given to me by Charlie Melville, of Pickersgill (Dec., 1911), who had learned them as a youngster from old Cornelius, the famous Arawak medicine man, a friend of Brett:

1st verse (man sings):

Basekento hiaro óma dibinifa toka- Short girl with-you going-to-dance to-
sakábo: day.
dalekebetofa ibini toma. Will-be-glad dance with-her.

2nd verse (woman sings):

Lihí wadili óma dibinifa kashiku- He young-man with-him going-to-
alli: dance house-master:
terebokondi óma. At-the-river-comes with-him.

3rd verse (woman sings):

Wibinatekéno dai-i kashikwalli óma Let-us-dance-then me house-master
hanshing-odómade: with-me if-you-like-me.
Wibinifa kena terebo-jáko. Going-to-dance now river-comes.

Another song of this mari-mari is:

Wáko-kwa yawara meloko ayuroko- Pigeon bush-rat bad steal away:
koba: my bird young goose-skin (*i. e.*, not
dalekin to-yóá kayúrawa tobo. yet feathered) now.

i. e., The wicked bush rat is stealing my pigeon, my little bird, before it is even feathered.

The following (also in the mari-mari) is supposed to be sung by a baboon (howler) to a black monkey:

Itori wadili kani wibinate: Baboon young-man nice let-us-dance-
together:
Horo-e hiaro óma datio. black-monkey girl with-my daughter-
in-law.

Crévaux's experiences among the Yaruro Indians led him to say that we are far from hearing songs wherein they exalt the virtues of their ancestors, or boast of the courage of the warriors of their

tribe (Cr, 571). On the other hand, Schomburgk thus expresses himself: "The art of improvising seems to be met with all over America. With trifling modulation of the voice, they sing about their deeds in war and in the chase, and have an inexhaustible flow of humor and satire" (SR, II, 193). On several occasions the distinguished traveler and his party would appear to have constituted the subject matter of their improvised songs (SR, II, 192).

598. The Indians are a very sociable people among themselves and frequently meet together in a large wigwam or carbet that is in every hamlet for the purpose, where, if they do not play or dance, they amuse each other with fiction, stories generally concerning ghosts, witches, or dreams, during which they frequently burst out into immoderate fits of laughter (St, I, 393). At other times, says Bancroft, they visit each other, and are mutually entertained, not only with the simple occurrences of their lives, but with a variety of fables which are merry, significant, and replete with such simple morality as their confined observations and uncultivated minds have suggested (BA, 328). So also, says Dance, one method of spending the hours before bedtime agreeably is to challenge explanations of some peculiarity of animals, or the solution of certain practices among Indians. . . . The person asked will then answer his question by relating a story, more or less elaborate, according to his ability (Da, 262). Brett distinguishes certain groups into which these fables or stories fall; e. g., the destructive deeds of animals of which *kanaima*, or a human soul acting under its influence, has taken possession, the doings of bush hogs and other animals temporarily possessed by other spirits, the explanation of the various natural phenomena surrounding them (Br, 374). In almost all the tribes that we got to know, says Schomburgk, it was the old women who take the place of the old bards, and plant these traditions from one generation to the other (SR, II, 320). A very common topic of conversation while lying in their hammocks at night will be a relation of the day's doings, not, however, in more or less general terms, as would be the case in ordinary European discourse, but with details of almost scientific precision, yet embellished with tiresome monotony and repetitions. The narrator will give particulars, step by step, of the route taken, the creeks crossed, the trees seen, the bird and animal life noted, the persons met, what he and they said and did, and everything else that was noticed, however ordinary or matter-of-fact it might be. Comparatively speaking, he will thus take hours to express what could, for all practical purposes, be just as well explained in as many minutes. Every now and again the listener will chime in with an exclamative note of agreement, doubt, or surprise. The reference of De Goeje from Surinam that the Trio have the peculiar habit

of telling one another whole stories in meter (*versmass*) and even in troches, is probably the customary form of salutation—more or less autobiographical—which is rattled off by rote (sec. 813). Thus, this observer continues: Toward evening men are often seen sitting together, one telling a story and another, as a sign of comprehension, repeatedly interpolating his “na!” or “nailé!” After a time the rôles are changed. I have often tried to find out what they said, but with poor results. Sometimes it is just everyday talk; e. g., “I am here now. I am soon off. You are staying here,” etc., or “I want a knife, a hatchet, a piece of cloth.” One sees them, however, so often occupied in this fashion that I conclude that they are really telling tales. When we were in Apikollo’s village, we took with us a Trio carrier to ask for Apikollo’s assistance. He concluded his commission while he related some story which took up quite a quarter of an hour, which Apikollo thereupon replied to with a similarly long one. A few short words then followed, and Apikollo went away. The request had been made and the answer given (GO, 26). The following are typical of some of the yarns that help to while away the hours (sec. 598) before falling to sleep:

599. *The story of “Tiger” and Turtle* (Makusi).—After they had received their respective body marks at each other’s hands (WER, VI, sec. 160), Tiger told Turtle to go and hunt for Maipuri (i. e., tapir, “bush cow”), of course never thinking that he would succeed. However, Turtle went to Maipuri’s house and said “How day?” and Maipuri put the customary pepper pot and cassava in front of him, but Turtle wouldn’t take any. So Maipuri offered him some deer meat, and this he refused. So he put some bush hog in front of him and he wouldn’t touch that either. Then Maipuri placed some cassava cake on the mat and he wouldn’t even look at it. He next asked Turtle whether he would like some hobo (plum) wine, and thus one after the other he asked whether he would like every imaginable kind of drink that he could think of, but Turtle still refused. This made Maipuri very angry, so at last he said, “Oh, well! Vetis ergo meam urinam gustare?” “Yes, that’s the very thing I should like,” said Turtle. So half in joke, Maipuri said, “All right. Open your mouth, and in os equidem tuum mingam,” and with that he started mingare into the Turtle’s beak. But Turtle knew what he was about and bit firmly into the fountain head and hung on. This made Maipuri jump and run, and as Turtle never let go his hold, thus they ran, tacked on together, far, far, until Maipuri at last fell down dead. Turtle now dragged the carcass to where Tiger was waiting and Tiger started eating. “Give me a bit of the liver,” said Turtle, but all he got for answer was, “No! I shan’t.” He received a similar reply to everything he asked for, from the heart downward. Tiger,

you see, was greedy and would not let him have anything. Turtle said, "This won't do," and so at night he gave Tiger poison and killed him dead. Now, Tiger's brother heard of this and followed Turtle to his house—a hole in the ground—and told him to come out. "No, thanks," said Turtle, "Me got good house, me stop here." Tiger waited and waited until he could wait no longer, he was so hungry, and he therefore told the Karaka [a savanna bird with red eyes] to keep watch for him at the entrance to Turtle's house. By and by, Turtle peeped out and said: "You are watching for me, eh? All right. Open your eyes wide and watch properly." So Karaka opened his eyes wide, wide, when Turtle threw a handful of peppers into them and half blinded him, making his eyes burn red, and while the bird was jumping around in rage and pain, Turtle came out of his hole into the open and made his escape. Some time after Tiger met Turtle again and said: "Eh? I will catch you now and eat you. I will break you upon a rock." "Now, don't be stupid," replied Turtle, "you can't break my shell upon a stone. It is too smooth and slippery. You will have to break me up against the turu palm at the waterside." So Tiger hoisted him on his back, took him down to the waterside, and threw him with full force up against the turu, but the hard shell glanced off the smooth bark and Turtle found himself in the water, safe once more. Tiger could never kill him.

600. *Legend of the haiari root fish-poison* (Makusi).—[Note.—cf. WER, vi, sec. 170.] A man met a bush cow (tapir) woman. She was tame, and he was the cause of her getting a big belly. One day he went to the waterside with her. And people came along with their dogs to hunt bush cow. He was sorry, and told them that when they see her, they must shoot her in the head, and not in the belly. By and by, the dogs track bush cow into the water, the hunters follow, and they shoot her in the head, dead. They burst the belly open, and there is a boy inside. One of the hunters takes the child, washes it in the creek and finds all the fish dead. The fish are caught and the bush cow cut up and eaten. A girl takes the infant to look after until he grows big. But every time she and her people go down to the creek to wash it, the fish get drunk, and they all have plenty to eat. "This boy must be good," the folk say, and they mind him until he grows big. And every time they wash him, the fish get drunk. They now take him to a large water hole; plenty of people go with him, and they say: "Go down deep, everywhere, in the water." He does so, but the Fish-Mama (i. e., the protecting "spirit," etc., of all the fish (see WER, vi, sec. 71)) kills him. The girl who looked after him as a child is sorry now. The people say: "We must not bury him, but wait till he rotten, and the blood come out." So they put him in a basket and carried him all about and wherever the blood dropped there the haiari grew. And then at last they buried him.

From his liver grew the konami (sec. 211); from his sweat grew the kunapuru (sec. 213): and from his skin grew the wild agave (sec. 209).

601. *The story of Maichoppa* (Makusi).—[Note.—Compare the Arawak story of the Medicine-Man and the Carrion Crows, WER, VI, sec. 303]. Maichoppa wanted to see Carrion-Crow Governor, i. e., the Vulture, and asked Blow-Fly where to find him. Blow-Fly said he would never find him until he were dead; he must stink first. [The Makusi tell me that they do not see the Vulture nowadays. He lives high, high up in the air on the top of a mountain, and is believed to have two heads.] Soon after there was a row between Maichoppa's house folk and those next door. All got killed except Maichoppa, who lay down very quiet among all the dead bodies, and stuffed his nose with cotton so that he might not feel the stench. Carrion Crows come along, and at middle night Vulture flies down. He tells the crows to call for more crows, and soon plenty more come. Vulture then takes off his wings and feathers before starting to eat. Were he not to do so, he would get all his beautiful clothes soiled with the putrid meat. When the birds finish on all the other bodies, and only Maichoppa is left, Vulture starts pecking at him, but he jumps up and frightens Vulture away, and with him all the other crows. Maichoppa next dresses himself in the Vulture's clothes that were left behind—the lovely wings and feathers—and finds he can fly “little bit,” but he can not steady himself as yet. So Spider spins him a line, ties one end onto a tree, holds onto the other, and manages to reach a certain height. Spider spins and spins again, each time a longer and a longer line, until he manages to reach high up in the clouds, on the top of the mountains, right in the heart of Vulture's country. And there Maichoppa meets Vulture's daughter, who goes to her father and says: “Papa! A man has come. I want him. Take him for son-in-law.” “All right,” replies Vulture, “but if I take him, he must build me a new house.” [Note.—He must fulfill certain of the marriage ordeals (WER, VI, sec. 277).] When she came back and told this to Maichoppa, he was very miserable, because he didn't want her for his woman, and did not know how to build a house on such terribly rocky soil. He managed to get the posts, but how to fix them into the ground was what troubled him. The eel came along and, learning what was the matter, told him to follow her. And as she bored each hole into the rocks he must fix in one of the posts. This he did. Then came all the trouble of the rafters and the thatch, but the mocking bird, the monkey, the squirrel, and other birds and animals who know how to make houses (nests) out of thatch (leaves) and rafters (twigs, branches), took pity on him, and helped him build. Now, Maichoppa

was afraid that Vulture's daughter might find out that it was not he, but all the other folk who were building her father's house, so he told the black witches (*Crotophaga major*) to keep in the bushes on the edge of the clearing, and to sing out directly they saw her coming each day with food and drink for him. And as she daily came to inspect the work and report to her father she, of course, thought that only he by himself alone was building the house, and said how very clever he was. When completed she told her father: "Your house is finished. Come and see it." "Not yet," he said; "I must have a new bench made first, and tell your man he must make it of stone and that he must carve my head on it." When she told this to Maichoppa he said: "What is your father like? I can not cut his head on the bench unless I see him first." This, of course, could never be, because Vulture only comes out in the middle of the night. Maichoppa was therefore again at a loss as to what to do, when Spider came along and offered to help him. She spun a cotton under Vulture's roof, and coming at night for Maichoppa, led him over many, many rocks and then down into a big cavern. Here he caught hold of the net (web) which Spider had spun, and eased himself. The dung fell on top of Vulture's head, and he shouted, "Daughter! bring me a light quickly. Something stinking has fallen on my head. Let me see what it is." The girl brings the light, and Maichoppa has a good look at Vulture, and sees what his two heads are like. But, although he now has a good idea of the face, he is again at a loss as to what to do, because he certainly does not know how to carve or hew stone. The *turé-turé* (a savanna bird) and the wood ants come to his assistance; they know very well how to cut into anything hard. So these two carve the stone bench out of the rocks and put Vulture's head at either end of it. More than this, they talk to the bench when completed and tell it to throw over and crush the Vulture when he starts to sit on it. This it does, and there is an end to Vulture. His daughter is now very sorry and angry, and she sends the Karaka bird (the same noted in sec. 599) to go fetch Maichoppa, but he manages to escape it. He gets into the kingfisher's house, but as fast as the Karaka follows him at the front door he gets out at the back. And thus from house to house he manages to strike the home of friend Spider, who hides him under the cotton that she is spinning. When, therefore, the Karaka comes along and wants to search her place, Spider says, "No. You musn't upset my cotton. I have just been sorting it. Maichoppa is not here." Now, the question was, How must he get down to ground once more? And again Spider befriended him. She told him she would spin a line, and he must catch hold of it, shut his eyes, and when he got to ground he must shake it and let go, and she would pull it up

again. He did as directed and climbed down the line, but when he touched the top of a giant silk-cotton tree he thought he was on the ground and let go the line as Spider told him. His present difficulty was how to get down the tree, and he felt so miserable that he began to cry. The Sanka-Sanka [a very big lizard that has a habit of running up and down the trunk of the silk-cotton tree] hearing the sound, came and inquired what it was, and offered to bring him down in safety. He told Maichoppa to jump on his back and hold on tight. But Sanka-Sanka was only fooling, and really intended eating him, and for very joy ran him up and down the trunk. It was the little dance preliminary to the feast. Maichoppa, however, waited his opportunity, and when Sanka-Sanka had got a little lower down the tree than usual during one of his "turns" he slipped off the creature's back onto the ground. He was now very hungry, but found his way to Acouri's house. Acouri himself was not at home, but his wife was. She was alone and very frightened, because she well knew that all the cassava she had had been stolen from Maichoppa's field during his absence. She therefore said, "Here! Take some cassava. It's all your own. I have just got it from your place for you." And so Maichoppa was quite satisfied, and later on went over to his own place.

602. The spirit of mischief would seem to have been as inherent in the Indian of three centuries ago as in his civilized brother of to-day, and it need not be at all surprising to learn that the Orinoco boys would play ball with the eggs of the larger turtle, and throw them at one another for sport (G, 1, 293).

603. The Otomac had quite an organized game that might almost be described as tennis, with all its side-show attractions of drink and betting, as is so admirably recorded by Gumilla. During the absence of the fishers and the laborers (in the provision grounds), the whole of the rest of the tribe gives itself up to keeping holiday, and merry making, in the assurance that on the following day they will have to do the fishing and the work in their turn, so as to give those who are working and fishing to-day a rest from labor. So the whole of those who are left at home meet at a beautiful and well-kept tennis ground that they have near their village at some little distance from the houses. The set consists of 12 Otomac on each side. They deposit the stake that is to be played for, and when that game is over they again deposit a stake for another match. They do not play simply for the sake of the game, but to win something. And they stake large baskets of maize when they have it, failing which, they stake strings of glass beads. And should the necessity arise, they play with a light heart for everything they have in their homes. For umpires they have elders of some distinction to call out fouls, to decide doubtful points, and to settle any disputes that

may occur. Outside of the actual players on the two sides, the rest of the people back some one side and some the other. In serving and returning the ball they exhibit such precision and dexterity that not even the most skillful players of Navarre could give them points. The ball itself, as well as the way of playing the game, is peculiar. The ball is a big one like a Maypole game ball, and is made of a resin that they call "caucho" [caoutchouc], and when thrown lightly down rebounds to the height of a man. The serve and return must be done with the right shoulder only; and if the ball touches any other part of the body the player thereupon loses one mark. It is a marvelous thing to see the bandying to and fro, to see them drive back and return the ball ten, twelve, and more times without allowing it to touch the ground. There is another thing still more marvelous to see how when a ball comes along the ground, the Indian concerned launches himself against it with the whole of his body. Just as they plunge into the water to swim, so do they plunge with the whole of their body onto the ground, and by this lively movement, once more lift the ball. And by the frequent repetition of this exercise they develop very hard callosities on the right shoulder, and at the same time an extraordinary dexterity at the game. Whilst the game is progressing, the women are occupied until midday in manufacturing very fine clay for it [i. e., evidently "buck pots," etc., to be used as stakes, or for betting with] as well as for sale to neighboring tribes, etc., . . . but, as the hour of noon arrives, every Otomac woman stops working, seizes her bat (stick), and goes off to play at ball. The bat is clubbed at the lower end to the extent of one-third of its thickness, measuring from one side to the other [i. e., more simply, the bulging lower end is a third thicker than the rest of the club], and has a thick handle three palms in length. With this, using both hands, they drive back the ball with such violence that there is no Indian that will dare to put his shoulder in the way to stop it. Therefore, from the time that the women join in the game with their clubs it is allowed to use the whole of the upper part of the back to return balls driven by a club; and it is seldom that a day passes without some Indian coming out of the game with his back injured by the furious strokes of the Otomac women, who greet these hurts with shouts of laughter. When the women arrive on the scene those play first whose husbands are on the two sides (playing at the time), 12 of them ranging themselves on each side, just as we described the men as doing, so that by the afternoon they are playing 24 on each side, all orderly, for everyone keeps to his own post and no one takes another's ball; and during the game they maintain perfect silence (G, I, 168-172).

[NOTE.—Compare the ball game played with the head among the Paressi-Kibixi Indians of the Matto Grosso.—*Zeit. f. Ethnol.*, 1912, Part I, p. 173.]

604. The next mention of this Indian game of tennis with a rubber ball is made by Von Humboldt from the River Atabapo (AVH, II, 345). I have also seen Makusi and Patamona boys playing with a rubber ball on the following lines: With the boys standing around in a circle (pl. 172 C) and keeping their relative positions in it throughout the game, the ball is thrown into the air and before reaching the ground must be struck by the flat of the hand. With this increased impetus it strikes the ground with greater force and a correspondingly greater rebound, when it is again struck while falling in similar fashion, and the game is to see how many times running a player can strike the ball on the fall. As soon as one boy misses his stroke, another has a try, and so on. It is no mean feat to keep the ball rebounding but half a dozen times on a rough, uneven surface.

605. Schomburgk describes a game of ball with maize cobs at the Makusi village of Tarong-Yauwise, at the head of the Cotinga, played by men and boys (but at this meeting there was a mixture of at least five tribes). The ball, made from a maize-glume (pl. 172 A), is thrown into the air within a closed circle of participants, and before reaching the ground has to be struck up again with the flat of the hand of the person nearest, so that it is in a continual motion. If it is missed and falls to the ground the player in question is made the laughingstock of the company (SR, II, 192). This method of playing is very like that practiced by young men on the Caiary and Aiary nowadays, where the ball (usually two are employed) ends in a tail formed of the extremities of the glumes, the shape reminding one of that of the English shuttlecock (KG, II, 126).

606. The Otomac Indians also appear to have had a game wherein the participants, placed in positions corresponding with the three corners of a large triangle, threw fruit stones, etc., at an individual stationed in the center, whose business it was by ducking, springing, and jumping to avoid being hit (G, II, 90).

607. True wrestling is practiced by Wapishana. The object, after closing in, is to lift the opponent off the ground. At the time of Appun's visit to the Arekuna at Ibirimu-yeng village, wrestling formed a part of the sports in which the evenings were spent during his stay. The Indians divided themselves into two opposing sides, out of which at a given signal, to the accompaniment of a mighty roar, which certainly was not inferior to that of the heroes before Troy, there stepped two individuals who let themselves loose upon

one another, and seized onto each other's naked body, until the one thrust the other beneath him to the ground (App, II, 278). The Taruma do not wrestle at all, while with the Parikuta and Waiwai it is almost a ceremonial, a part and parcel of the salutation. After the drinks have been handed around and partaken of (sec. 811) an individual will stand upon the sounding-board (sec. 581) and challenge all and sundry to a wrestle. A rival coming up, they will give one another with a long whip a terrible lash or two around the back and across the belly, and then proceed with their wrestling. In this case the object is to throw one's opponent so that his back strikes the ground. When another tribe visits these Parikuta this wrestling must be gone through with every man of the visiting party. When Parikuta visit Parikuta it is optional (JO).

608. For the earliest mention of the shield game of the Warrau we are indebted to Schomburgk, who saw it played by these people at Caruabo (Caruwava, Caruawa) . . . It is played in parties two against two, and the champions, painted and dressed in the distinguishing modes of their tribe, show their athletic skill by attempting to push each other from a space of ground by means of the haha (naha), which resembles a shield. It appeared to us an innocent pastime which gave ability to their limbs and displayed to the greatest advantage their muscular power and fine proportions (ScB, 181). Again, among the same nation on the Barima, the distinguished traveler describes how the people of the settlement divided themselves into four parties and proceeded to an extensive cleared circular space at some distance from the village. On a given signal the combatants, two at a time, with their shields tried to shift one another from a certain point in the circle (pl. 172 B). The one who succeeded in doing so was declared victor until challenged by another whose activity or strength took the championship away from him, and so on. The two combatants finally remaining from the opposed sides were finally led with rejoicing and shouts of triumph as victors to the paiwarri trough, where the girls met them with calabashes already filled (SR, I, 294). It is noteworthy that Schomburgk makes no mention anywhere of the wrestling match determining the settlement of anything in the way of quarrels or disputes, an absence followed by Brett (Br, 349), who speaks of it as a trial of strength practiced by the Warrau at their drinking bouts. On the other hand, Im Thurn, some 36 years later, talks of its use as a practical means, a trial by ordeal, of settling disputes which may have arisen between distinct groups of Warrau, stating that it is the only game known to him which is not accompanied by drinking (Ti, Dec., '89, p. 292), though he had previously recorded its being practiced at the paiwarri feasts (IT, 326). True it is that certain of the older

Moruca River Warrau have told me that, though many years had passed since the last game had been played, they remembered its occasional application in the way of settling the many minor misunderstandings which would be always arising, but these were never of a direct personal nature. Thus, if an Indian believed that something had been stolen from his logie, that his sister had been on terms of intimacy with one who had not previously obtained his permission, he would challenge the suspected person to combat. So also, when the young boys attempted to visit the girls occupying the special logies during their menstrual periods, or if they carved representations of the female genitals on the trees in the neighborhood, the men who might thus consider themselves insulted and belittled by such behavior toward their female relatives would challenge the parents of the alleged delinquents to such a contest. In my own opinion the "game" is a relic of a salutation ceremony, as was, and still is, the case with certain wrestling matches in other districts (sec. 607). Each of the antagonists, says Brett (Br, 349), is furnished with a sort of shield made of the light branches (leafstalks) of the ite (palm), cut into equal lengths and firmly lashed across a frame 3 or 4 feet in height, but somewhat less in width, and slightly bending outward . . . by means of two cords attached behind (pl. 173 A, B). From its front and upper edge arise elastic stems, generally three in number, adorned with colored tassels and surmounted with streamers . . . The edges of the shield are firmly grasped with both hands. Each champion comes to the contest with two backers, the women, children, and other non-combatants standing round in a circle. The fight starts by one of the disputants in the kneeling position, but with one leg well aback, holding the shield upright on the ground. The other will then make a rush and, knocking shields, exert his utmost pressure to try and roll him over, but the latter will now slowly rise to the standing position, both shields pressed one against the other. The contest is now generally one of mere strength, the shield being pushed forward with the whole force of the body and supported by one knee while the other leg is extended firmly behind. Thus they may remain, pressing, panting, and struggling, until exhausted, when the contest ceases by mutual consent. If, however, one of the combatants is able to push the other off the ground, or by a dexterous slip and thrust on the flank sends him rolling on the sand, and in such an encounter an individual may be badly injured about the head and body, the fight is at once ended, but only to be immediately resumed by a backer from either side, these fighting on exactly the same lines. If necessary, these will be succeeded in their turn by the second backers of each party. As the contest between

each respective pair comes to an end, it is then a point of Warrau etiquette to shake the shields at each other in a jeering manner . . . This is generally followed by a hearty good-humored laugh, in which the bystanders join. Im Thurn describes the "game" as consisting of each party drawn up in a long single line, the two lines facing each other in such a way that each player has immediately facing him a player of the opposite side of about his own size . . . Each maker prepares his shield of a size suitable for himself, so that these vary from that of the big full-sized man to those of the small boys (Ti, Dec. '89, p. 292). The front of each shield is painted in various colors, and with some peculiar device according to the fancy of the owner, says Brett (Br, 350). But this statement does not tally entirely with the information since received from various old men who remember having seen these articles in their younger days. I learn that only three orthodox designs were in vogue—the sun, represented by a circular patch of paint; the moon, indicated by a crescent lying horizontal with its convexity downward; and the cross-shoulder ornament expressed by a St. Andrew's cross, while the heads or chiefs alone of each settlement would have human figures represented. The only color said to have been employed was the annatto in its various shades. The Warrau name of the man or champion who handles the shield is taratu, and that of the shield hisahi or isahi. From the fact of the implement having been manufactured from the leafstalk (naha) of the ite palm, it was also known as naha, a word which was apparently wrongly printed in Schomburgk's work as haha, an error that seems to have been copied by others. Warrau have told me that Brett's picture of the wrestling game (Br, 350) is correct in the details of the positions assumed by the participants; in the style of the hair, which in the old days was always allowed to grow till over the shoulders; and in the way that the loins are enveloped with creole cloth, the first substitute with advancing civilization for the original "lap."

609. As with many another savage race, the exercise of weapons is encouraged at an early age. Thus, in Surinam the main sport of the Indians consists in practicing with the bow and arrow; but what is most surprising is that their children practice it at a very early age and have no other amusement in their earliest youth than to shoot at small birds, without hardly ever missing one, with the result that . . . they don't at all fear their enemies by the confidence which they have in their own skill (FE, 53). The same held true on the Orinoco with the Otomac children. The youngsters of the same village form battalions, choose leaders, place their "men" in position, give a signal, and wage their petty wars in the rehearsals of which their parents take great pleasure. In these sham fights they

use arrows of thick rush, which can neither do damage nor wound, and shields to exercise themselves in avoiding the blows of a stone, spear, or arrow. As this exercise is their only one throughout life, it is incredible the skill which some of them develop. [An example is then given of a case where an Otomac bet with three Spanish soldiers that if placed at the corners of a triangle and he in the center they would not hit him (sec. 606). The Indian won his bet, avoiding every stone thrown by the trio.] The mothers also cooperate in the arrow exercise by not allowing food or fruit in their children's hands before putting it up as a suitable target, so that their appetite may encourage in them the skill necessary for hitting with the arrow point that which they are anxious to eat. Trained thus in youth, by the time they are ready to proceed to battle, some of them have a reputation for being very skillful with the arrow and particularly dexterous in warding it off, either with the shield or even with the bow itself, a feat which few can perform and hence much appreciated by the others (G, II, 89).

610. On the Pomeroon and Moruca Rivers the present-day Arawak boys may occasionally be observed amusing themselves by shooting arrows at a papaw fruit rolled down a gentle declivity of the ground. They are supposed to be hunting acouri. I have found Makusi and Wapishana youngsters amusing themselves with an arrow tipped with an emptied akkoyuro seed through the side of which a hole had been drilled. When shot into the air a soft whistling sound is produced. The young Carib boys of the Barima will shoot at the smaller varieties of bird with a little five-pronged arrow, the four extra barbs being fixed around the circumference of the shaft, some 3 or 4 inches below the tip, at a fairly acute angle, with gum-cement and twine.

611. With miniature pots little girls will play at grating and baking cassava, at making various drinks, and with little quakes will pretend to gather firewood. Boys, in addition to their fighting and hunting games, will build little houses and then pretend to cut down a field which the girls will promptly come and plant. Of children's other imitative games, the following have been mentioned in connection with the Makusi: Coming from Georgetown, the acouri in a pen with jaguar trying to get him out, a flock of vicissi duck, a brood of chickens captured by hawk, an anteater supplying himself with ants, a buzzing swarm of wasps, etc. But young men may join most heartily in some of these games (Ti, Dec., '89, p. 273). I have had the opportunity of watching several such games among Patamona children at Karikaparu, about five days' march from Roraima. Standing one behind the other, with their arms on the hips of the one in front, the biggest boy leading and the smallest bring-

ing up the rear, they will imitate the antics of the kibihi (raccoon) and of the wild hog. In the former case they keep repeating the following verse:

"Nono yanchikuri weremai weremai weremai!"
(dirt, earth looks for kibihi kibihi!)

And in the latter, this one:

"Werpawerpa yakuniauwong kináku
(hill, mountain to, at foot of food)
yékaremai woi-yo woi-yo-wa pika-pika-wa."
(shows a certain bird a certain bird.)

in reference to the belief that it is through the agency of these birds that the bush hog is enabled to find its food. Then there is another one about the bunia bird:

"Terupa yapíapo tinotori tinotori terupa."
(seed-food eat upon bunia bunia seed-food.)

When dancing the crab, the boys will all sit on their haunches in a ring, join hands, and in this position circle round to the right or left, at the same time singing:

Telepo tutasamo ma-wai ma-wai
(one-sided crawling crab crab.)

Another interesting one is imitative of the Mountain Spirit, Kara-imba, when they will sing:

"Se-ai epakaperka Kara-imba! Kara-imba!"
(Cavern, hole, Come-out-of Mountain Spirit! Mountain Spirit!)

The "Tiger" game is a very lengthy and laughable one, the creature being represented by the performer hopping around on both hands and one leg, the other leg held high to represent the tail: the accompanying song is "Kaikutchi moramang" (Tiger there!) Schomburgk describes a similar one from the Arekuna (SR, II, 193).

I am unable to recognize the meaning of the following pastime recorded by Brown from north of Enaco toward the upper Potaro, among the Patamona Indians: In the afternoon the youths and boys of the place played a game over which they made a good deal of noise and seemingly enjoyed. They formed a line across one of the wide approaches to the village, while one of the strongest of the number made an effort to break through by rushing against it at his greatest speed. Any man who approached the village had likewise to break through before he could enter the place (BB, 195).

612. Attention has been drawn to the clever manner in which the children on the Aiary modeled little figures of men and animals out of black wax, of which many examples are shown (KG, I, 120). The same people, apparently trained to the use of the "brush" in painting their bodies, weapons, and mask-dance accoutrements, had little difficulty in making use of a pencil and sketching very various

and often complicated subjects in a sketchbook. Among the contributions from British Guiana to the London International Exhibition of 1862 were figures of clay made by an Indian of the Caribisi tribe, from the Mazaruni River, representing human beings and an armadillo. They were the only specimens of Indian plastic art ever seen by the contributors (CC, 53).

613. A game met with among the Moruca River Arawak, in which children of both sexes take part, is a sort of hide-and-seek with a seed hidden in the ground within the circle of participants seated around.

614. Wooden dolls for the girls are made by the father, and the miniature hammocks in which to let them rest by the mother. This is what I have noticed among Carib, Arawak, Warrau (pl. 174).

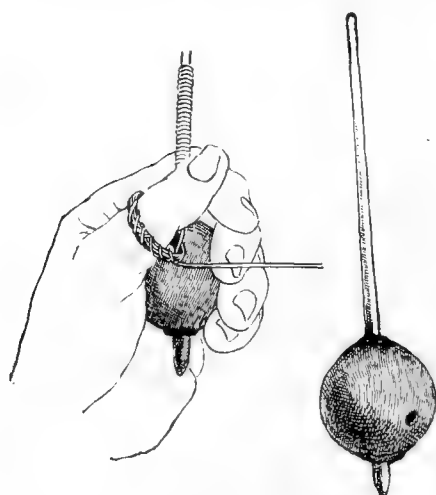


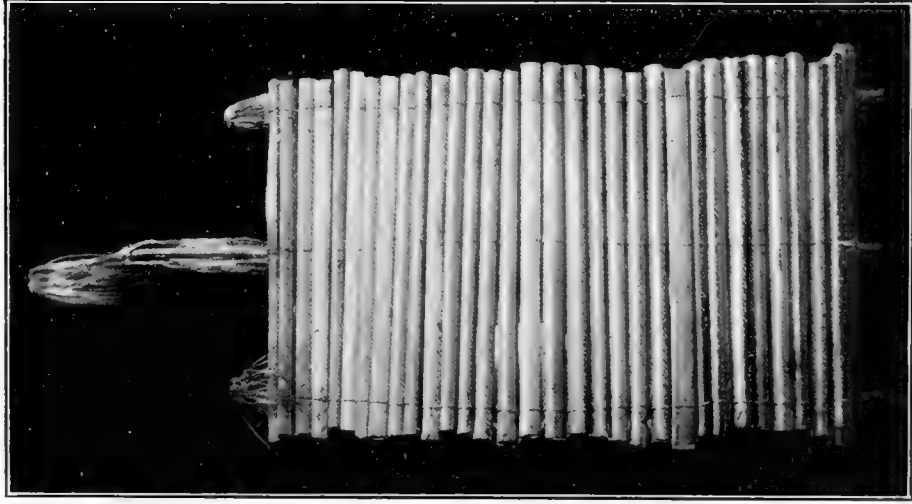
FIG. 240.—Method of spinning the top.

615. Certainly in our own colony and in the western Guianas the youngsters are very fond of playing with tops made from the *astrocaryum* seed, through which a stick is passed and fixed with cement. Occasionally the seed is hollowed out, and with a lateral aperture it can be made to "hum." Known as *teréri* to the Warrau, it is spun by winding the string round the stem, and then passing it under a tough *kuraua* ring held over the left thumb (fig. 240). The game consists of the two or three opponents

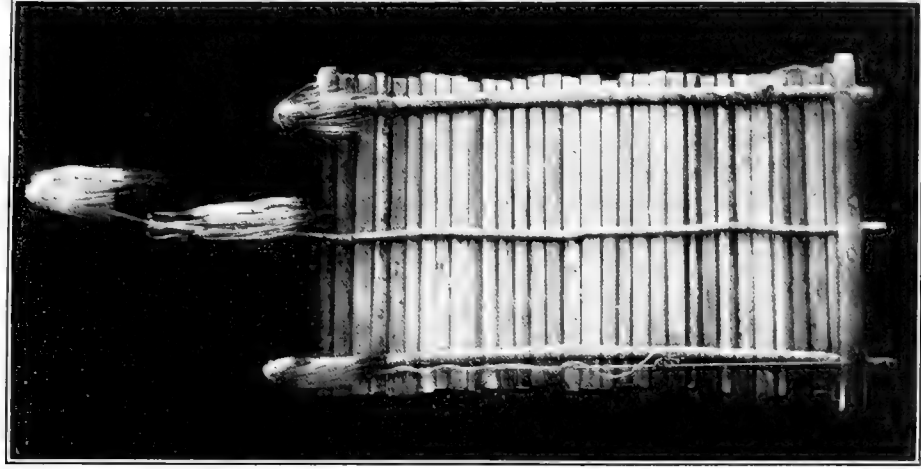
spinning their respective tops into a square cassava tray, and seeing which one will knock the other's out. The same method of spinning is practiced with the humming tops made of similar seeds on the upper Rio Negro (KG, I, 121), except that there appears to be some mistake in the illustrations furnished, which represent the body of the top as being held up instead of down. From the same localities mention is made of "tee-to-tums" manufactured of a circular wax disk through which a wooden splinter is passed (KG, I, 120).

616. Though blowguns are not used by the Wapishana, I saw toy ones employed by the boys with some miserable dog or other as target.

617. A "catcher" or sort of elongated finger stall is plaited of palm leaf (fig. 241, F, G) or itiriti strands (pl. 175 A) in such a manner that when a finger is inserted, and the free end of the toy



A



B

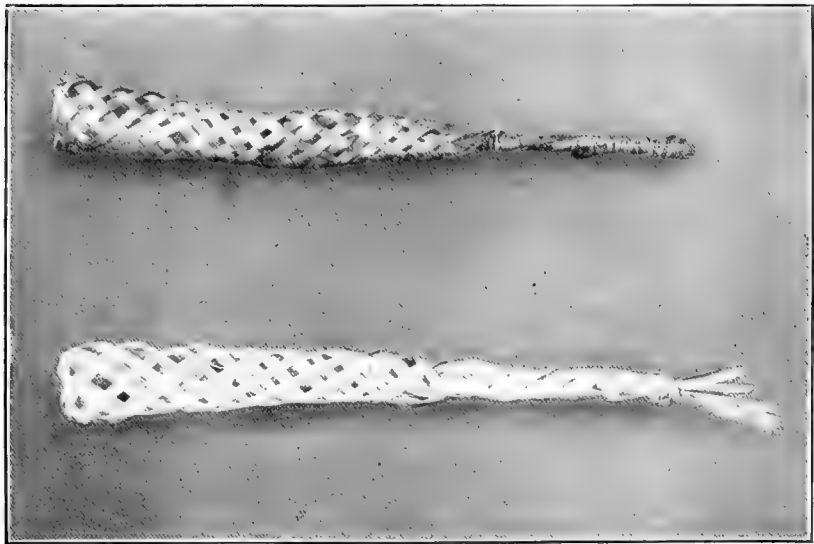
WRESTLING SHIELD OF THE MORUCA RIVER WARRAU

A, Front view. B, Back view.

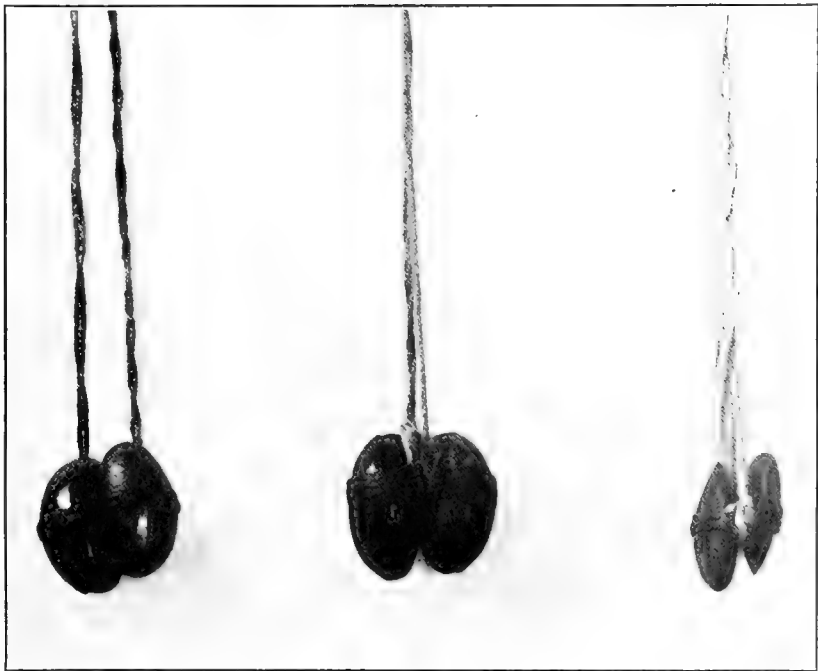


WOODEN DOLLS. UPPER POMEROON CARIB

Compare the single-legged specimen with the shell chest ornament shown in plate 148.



A, "Catchers."



B, "Buzzers."



PHOTOGRAPHS OF ENGRAVED ROCKS. WARAPUTA FALLS,
ESSEQUIBO RIVER

(Georgetown Museum.)

pulled upon, the circumference contracts and so holds the finger fast. To catch an unwary stranger in this manner and so drag him along often gives rise to endless fun. I have found the article with the Carib, Makusi, Patamona, Arawak, and Warrau. On the Tiquie it is called a snake (KG, I, 274). On the Moruca, Warrau call it *mohu-tatabu*, *i. e.*, finger hold on.

618. Walking on stilts is practiced by Makusi boys, as I have often watched them amusing themselves. Carib lads are also said to have

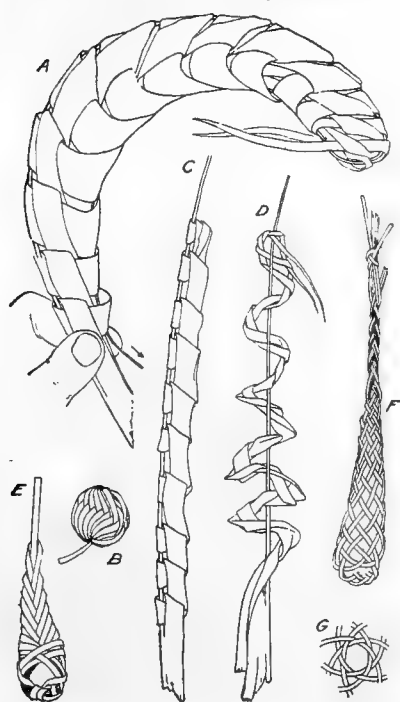


FIG. 241.—Leaf-strand figures. The sweet-heart's whereabouts (A), a ball (B), fancy forms (C, D), hassa fish (E), a catcher (F, G).

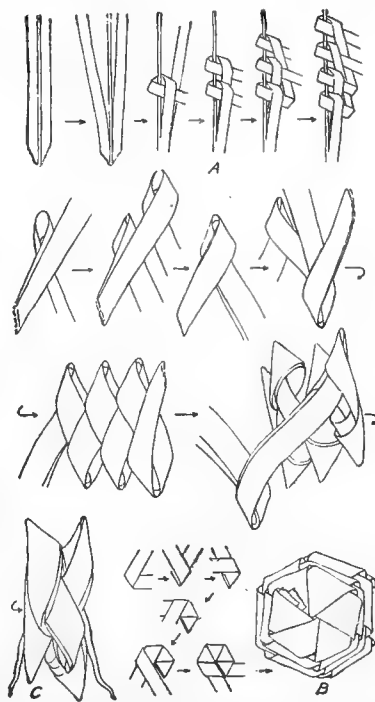


FIG. 242.—Leaf-strand figures. A, Fancy form; B, cassava cakes; C, a holder for gru-gru worms.

indulged in the sport on the Pomeroon in the early days. Siusi boys on the Aiary do the same thing (KG, I, 119).

619. The Makusi, Patamona, Warrau, and others have a sort of "buzzer" made of two hard emptied seed capsules strung with their openings placed at opposite ends (pl. 175 B) upon a string that is twirled between the two hands, which are alternately stretched and approximated. A similar toy is found on the Tiquie (KG, I, 274).

620. There is to be seen in the Pomeroon district a rattle plaited out of itiriti strands in which stones or seeds are inserted (sec. 437). Among the Carib of the Manawarin (a branch of the Moruca

River) I have come across clay rattles, in the shape of turtles, as children's toys. The rattle (*maraka*) made out of a calabash is rather an adult's musical instrument for use at the dances (sec. 573). A substitute for a baby rattle is found in the emptied crab claws threaded on a string by the Pomeroon district Arawak and Warrau.

621. Leaf-strand figures.—In the course of manufacture of a basket, a fan, a *matapi*, or some other such article it often happens that a strip or two of *itiriti* strand, pimpler palm, or *kokerit* pinnule, etc., will be left over and discarded. But very generally these trim-

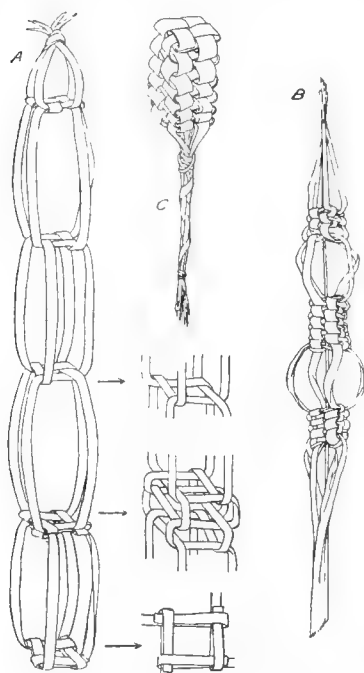


FIG. 243.—Leaf-strand figures. A, Clouds; B, a lamp; C, a rattle.

mings will be picked up by the children, and either by them or by the weaver worked up into some fancy toy or plaything. With the midrib and half the pinnule retained, the Arawak and others will construct the figure sketched in figure 241 C. The toy represented in figure 242 A is made from *astrocaryum* leaf, but with the whole pinnule and midrib utilized. It can also be made in similar fashion from *kokerit* (fig. 241 A) with the midrib finally passed back again through the successive loops and its distal extremity pulled upon. This movement will cause a bend and twist in the article, which thus comes to point in some unexpected direction where, so the Wapishana say, the manipulator's sweetheart is. Certain of the figures can be used as house decorations or ornaments (sec. 326). Sometimes the toy or ornament may be in

the form of a spiral around the midrib (fig. 241 D), or may help to support it in the manner of a column or pillars (fig. 243 B). Without the midrib many an Indian can make figures representing a rattle (C), a series of clouds (A), a pile of cassava cakes (fig. 242 B), a four-ply open plait with *astrocaryum* (fig. 244 A), or a close one with the *kokerit* (B) identical with the plait used in the *parishara* dances (sec. 589). Play boxes can also be constructed (sec. 387). A Makusi made the six-celled contrivance (fig. 242 C) for holding *gru-gru* worms (sec. 178), as he alleged. With remnants of *itiriti* strand one can construct a ball (fig. 241 B), a *hassa* fish (E), a catcher (F, G; sec. 617), and a jumping flea (fig. 244 C). This last one is made of three strips

interlocked, etc., and when sharply pressed upon toward its center can be made to "jump."

622. Arawak and Warrau youngsters on the Pomeroon and Moruca have a few water games. With the boys a favorite pastime in the shallows is the following:

Two corials, without occupants, are each kept at their ends by two youngsters in a position parallel to one another and from 8 to 10 feet apart, not at rest, but violently shaken up and down so as to make the intermediate stretch of water as artificially rough as possible. When this condition has been attained, another corial, with paddlers, has to pass through the lines without being upset—often a very difficult feat. Another apparently very enjoyable sport is for one child to dive into the water when another, from the bank, will throw in a long bush rope, the extremity of which he retains in his hand. The diver gropes about until he manages to

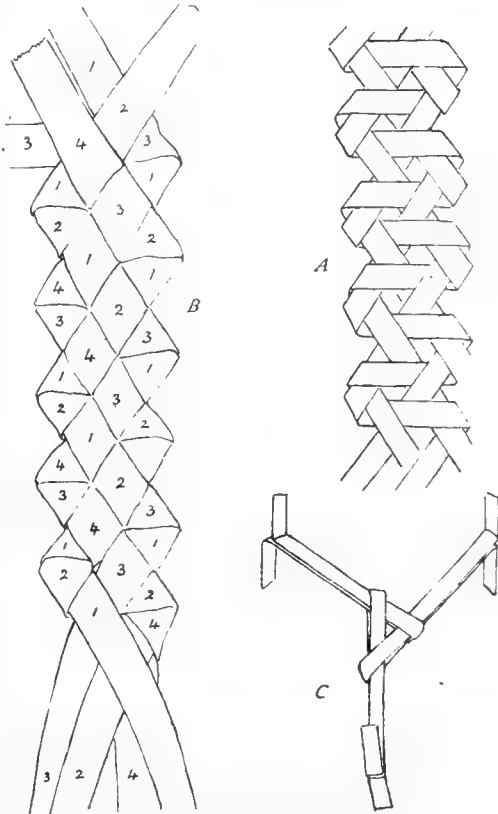


FIG. 244.—Leaf-strand figures. A, B, Four-ply plait; C, the jumping flea.

seize the free end between his teeth, by which means he is hauled to the surface. This is called "playing at fishing." Sometimes the little girls will stand in a circle in the water—they are supposed to be boiling the cassava in water to make cassiri—and one after another goes into the center and dives down to see if the drink is ready. Both little boys and girls will play at snake or crocodile by diving under water and blowing bubbles up to the surface as they swim along below.

CHAPTER XXIV

STRING FIGURES, TRICKS, AND PUZZLES

Preliminary (623); the string (624).

Definitions (625): Position 1 (626); opening A (627); opening B (628); opening C (629). Position 2 (630); opening A (631); opening B (632). Position 3 (633); opening A (634). Position 4 (635); opening A (636); opening B (637).

Synopsis of abbreviations (638).

Examples of position 1: Jumping dog-flea (639); crab (640-642); house-door (643); snake (644); frog (645); palm (646, 647); two palms (648); star (649); the Pleiades (650); moon (651); hammock (652).

Examples of position 1, opening A: Forked sticks (653); visitor come and gone (654); trap, snare (655, 656); butterfly (657); two islands (658); sun between clouds (659); swamp with log across (660); little fishes (661); looking glass (662).

Examples of position 1, opening B: Skeleton, ghost, etc. (663); flat board (664); beetle (665); basket (666).

Examples of position 1, opening C: Bird's nest (667); corial (668); bird's breastbone (669); honey, hollow tree trunk (670).

Examples of position 2: Fish marching (671); monkey or caterpillar (672); fish-trap, creel (673, 674); bird trap (675).

Examples of position 2, opening A: Banab (676); two creels (677); jaw-bone or man in hammock (678, 679); corial (680); door (681).

Examples of position 2, opening B: Bat (682); silk-cotton tree (683); with eagle's nest (684); eaglets (685); night clouds and daylight (686-689).

Examples of position 3: Bush, palm trees (690); dragon-fly (691); cow-fly (692).

Examples of position 3, opening A: Yarrau fish (693); ite palm (694).

Examples of position 4: Mosquito (695); bird footprints (696, 697); rainbow, mountain (698).

Examples of position 4, opening A: Four-eye fish (699); sunfish (700).

Examples of position 4, opening B: Sting-ray (701); spider (702); parrot (703).

Miscellaneous figures, tricks, and puzzles: Baby sling (704); "patois" fish (705); woodpecker (706); fowl anus (707); cutting the fingers (708-710); hanging trick (711, 712); to remove a figure from bow-string (713); to remove the endless string off two sticks (714); to separate two locked sticks (715).

623. Though the first to record and illustrate string figures from Australia (*North Queensland Ethnography*, Bull. No. 4, March, 1902) and from South America (WER, I), I had neither time nor inclination either to devise measures of my own in the former case or to adopt that of others in the latter, with a view to describing the

progressive stages of manipulation. Circumstances, however, having changed, I am now able to record some seventy-odd figures from the Guiana Indians explaining the construction of each on the basis laid down by Messrs. Haddon and Rivers. But these authors having only recorded a position 1, with an opening A, I have seen fit to extend the former to at least four positions according as the string is stretched (1) over the thumbs and little fingers, (2) over the wrists, (3) upon the thumbs, or (4) on the indices. At least one figure can be commenced in two positions; e. g., a corial in position 1 (sec. 668) and in position 2 (sec. 680). Another can be commenced in two different openings (secs. 659, 665). Some of the figures illustrated in the following pages have their counterpart in those met with in other parts of the globe. The Warrau name for these string figures is *doma-ameho*, i. e., marudi breastbone, which, with its attached ribs cleaned of the flesh, does, indeed, bear a resemblance to the strings stretched over the two hands.

624. An ite, a cotton, or other string is usually employed of a length a little greater than that between the hands with arms extended. A piece about 6 feet long will prove convenient, though for the manufacture of certain of the figures a shorter string is desirable. Its ends are spliced so that in the many turns and twists to which it is exposed there may be no knots or kinks to hamper its running smoothly and freely.

625. "A string passed over a digit is termed a loop. A loop consists of two strings. Anatomically anything on the thumb aspect of the hand is termed 'radial,' and anything on the little-finger side is called 'ulnar.' Thus every loop is composed of a radial string and an ulnar string. By employing the terms thumb, index, middle finger, ring finger, little finger, and right and left, it is possible to designate any one of the 20 strings that may extend between the two hands. . . .

"A string lying across the front of the hand is a palmar string and one lying across the back of the hand is a dorsal string. . . .

"Sometimes there are two loops on a digit, one of which is nearer the finger tip than the other. Anatomically, that which is nearer to the point of attachment is 'proximal,' that which is nearer the free end is 'distal.' Thus, of two loops on a digit, the one which is nearer the hand is the proximal loop; that which is nearer the tip of the digit is the distal loop. Similarly, we can speak of a proximal string and a distal string. . . .

"The manipulation consists of a series of movements after each of which the figure should be extended by drawing the hands apart and separating the digits. [This extension and separation is here and there described in the text as 'Return.'—W. E. R.] . . .

"There are certain opening positions and movements which are common to many figures:

626. *Position 1* (fig. 245).—"Place the string over the thumbs and little fingers of both hands so that on each hand the string passes from the ulnar side of the hand around the back of the little finger,

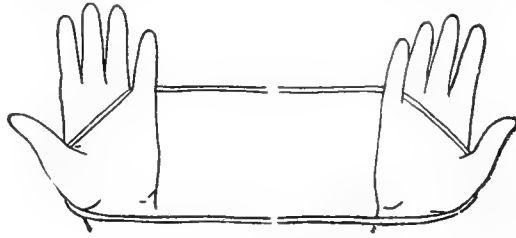


FIG. 245.—Position 1.

then between the little and ring fingers and across the palm; then between the index and thumb and around the back of the thumb to the radial side of the hand. When the hands are drawn apart the result is a single ulnar little-finger string on each hand, with a string lying across the palm. . . .

627. *Position 1, opening A* (fig. 246).—"Place string on hands in position 1. With the back of the index of the right hand take up

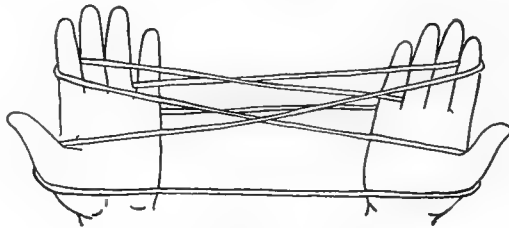


FIG. 246.—Position 1. Opening A.

from proximal side (or from below) the left palmar string and return. . . . With the back of the index of the left hand take up from proximal side (or from below) the right palmar string, and return, keeping the index within the right index loop all the time, so that the strings now joining the loop on the left index lie within the right index loop.¹ The figure now consists of six loops on the thumb, index, and little finger of the two hands." (Haddon and Rivers.—Rept. Camb. Anthropol. Expt. to Torres Straits, Vol. IV.)

¹ It is essential to remember that the exact course of this manipulation should always be followed, i. e., to begin the movement with the back of the index of the right hand, and so avoid subsequent errors. For instance, in the Taruma trap (sec. 655) if the manipulation required to obtain position 1, opening A, is commenced with the back of the index of the left hand, the figure obtainable is not the one illustrated.—W. E. R.

628. Position 1, opening B (fig. 247).—Place string on hands in position 1, opening A. In each hand pass the thumb over distal side of index-finger loop, and insert it into little-finger loop from proximal

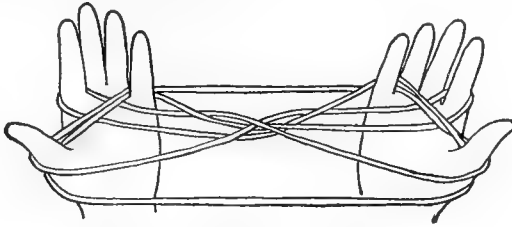


FIG. 247.—Position 1. Opening B.

side. With the back of the thumb hook up the radial little-finger string, and, with it, return to its original position. Similarly, in each hand, pass the little finger over distal side of index-finger loop, and

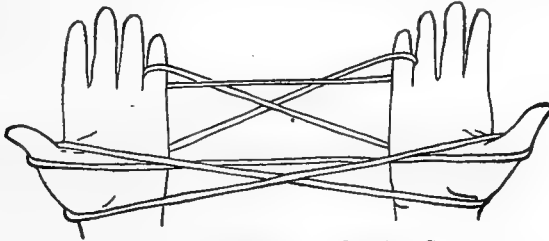


FIG. 248.—Position 1. Opening C.

insert it into thumb loop from proximal side. With the back of the little finger hook up the ulnar thumb string and, with it, return to its original position. It will be noticed that in this figure there is on each hand a doubled palmar string.

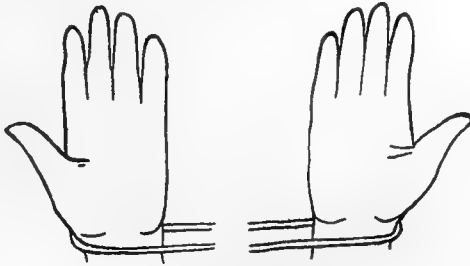


FIG. 249.—Position 2.

629. Position 1, opening C (fig. 248).—Put the string on both hands in position 1, opening A. Remove the loop from off each index and place it over its respective wrist.

630. Position 2 (fig. 249).—Place the string over both wrists. When, therefore, the hands are drawn apart we have on each a single radial and ulnar wrist string.

631. Position 2, opening A (fig. 250).—Place the string behind the wrists of both hands in position 2. Bring the radial and ulnar wrist strings of each across the palm, through the first and third inter-

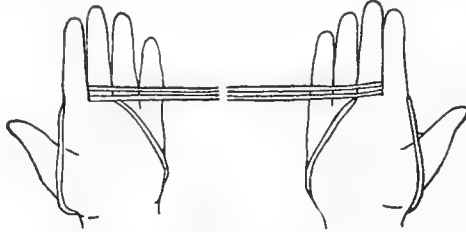


FIG. 250.—Position 2. Opening A.

digital spaces, respectively, then pass them around the backs of the index and middle fingers, and so out again between these two. Note the two palmar strings—a radial and an ulnar.

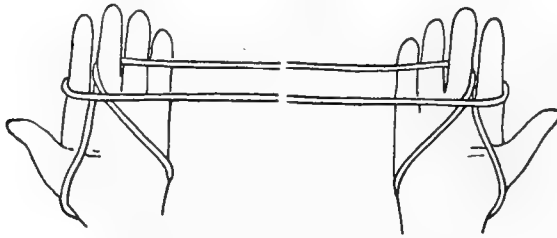


FIG. 251.—Position 2. Opening B.

632. Position 2, opening B (fig. 251).—Place string in position 2. Bring up the radial and ulnar wrist strings in front of palm into the fork between index and middle fingers and back again on radial and ulnar sides of same digits, respectively.

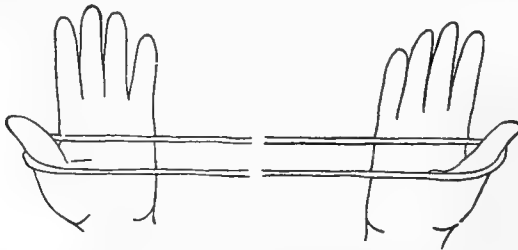


FIG. 252.—Position 3.

633. Position 3 (fig. 252).—Place string on the thumbs. There is now a single radial and ulnar thumb string on each hand.

634. Position 3, opening A (fig. 253).—Place string in position 3. In each hand slip the radial thumb string over the index, with the

result that there is a right and left radial thumb string and ulnar index string.

635. *Position 4* (fig. 254).—I know of no cases where the figure is commenced with a single loop on the index to correspond with a single one on the thumb or wrist. On the other hand, there are four

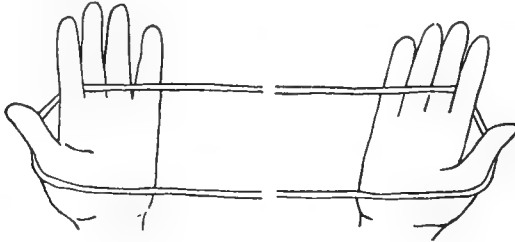


FIG. 253.—Position 3. Opening A.

examples where it begins with a double twist. I therefore (somewhat irregularly) propose calling this position 4. It is obtained as follows: Wind a turn of the string around top of left index finger and maintain in position with thumb. Place the two index fingers

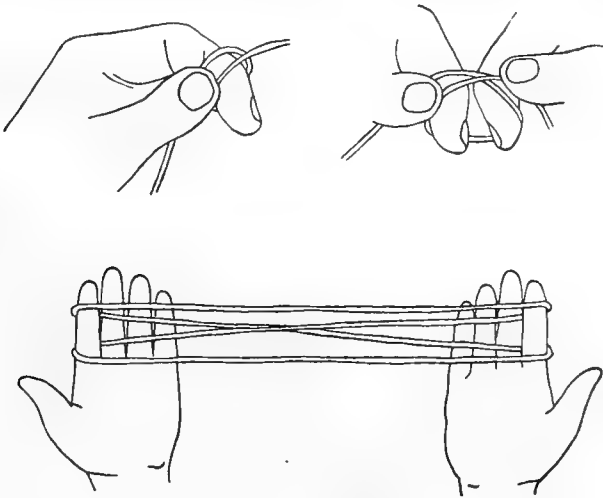


FIG. 254.—Position 4.

back to back, and insinuate the top of the right one into the loop, at back of left index, from its proximal side, steadying the string with the thumb during the process. Now rotate the fingers inward (i. e., toward you) and upward; let go the thumbs, and draw the hands apart. The resulting figure consists of a proximal and distal loop, i. e., of a radial proximal and distal string, and of an ulnar proximal and distal string, the two latter being crossed.

636. *Position 4, opening A* (fig. 255).—This figure will correspond with opening A of position 3, the loop passing behind index and middle finger. On each hand there is now a radial index and ulnar middle-finger string.

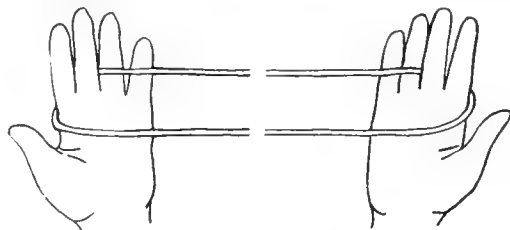


FIG. 255.—Position 4. Opening A.

637. *Position 4, opening B* (fig. 256).—Also somewhat irregular. Loop each end of the string upon itself and place it over index and middle finger.

638. I have had cause to make frequent use of the expression “Exchange loops” to indicate the manipulation necessary to simul-

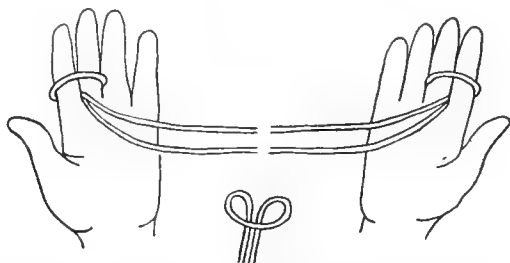


FIG. 256.—Position 4. Opening B.

taneously exchange the loop on the back of a digit on one hand for a loop on the back of the corresponding digit on the other; e. g., the second and third stages in the manufacture of the basket or quake (sec. 666).

The following is a synopsis of abbreviations:

<i>H</i> = hand.	<i>Aka.</i> = Akawai.
<i>L</i> = left.	<i>Ara.</i> = Arawak.
<i>ra</i> = radial.	<i>Car.</i> = Carib.
<i>st</i> = string.	<i>Mak.</i> = Makusi.
<i>t</i> = thumb.	<i>Pat.</i> = Patamona.
<i>m</i> = middle finger.	<i>Tar.</i> = Taruma.
<i>l</i> = little finger.	<i>Tau.</i> = Taalipang or
<i>BH</i> = both hands.	Taurepang.
<i>R</i> = right.	<i>Wai.</i> = Waiwai.
<i>ul</i> = ulnar.	<i>Wap.</i> = Wapishana.
<i>wr</i> = wrist.	<i>War.</i> = Warrau.
<i>i</i> = index finger.	
<i>r</i> = ring finger.	

639. *The jumping dog-flea.* Ara. (fig. 257).

Use a comparatively short string.

BH.—Position 1.

LH.—With *Ri* hook up palmar string from distal side, and pull out, at the same time twisting *Ri* inward (toward you) and upward.



FIG. 257.—The jumping dog-flea. (Arawak.)

RH.—With *Li* passed through *Ri* loop, take up and pull out palmar string in similar fashion.

BH.—Loose thumbs.

BH.—Loose little fingers, but in pulling apart, return the hands slowly and gently until a knot appears. This knot is the dog-flea.

Now stretch the hands forcibly apart. A “click” is heard; the flea has jumped away.

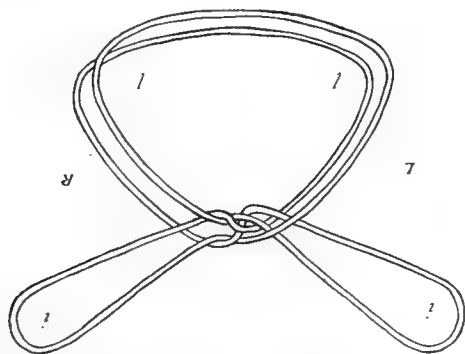


FIG. 258.—Crab. (Wapishana.)

640. *Crab.* Wap. (fig. 258). This figure may sometimes be used to indicate a trap or snare, the visitor inserting a finger into the “body” of the crab and the manipulator then slipping the “claws” off his little fingers and extending his hands.

Use a very short string.

BH.—Position 1.

LH.—Take up palmar string with *Ri* by passing the digit underneath it from the distal side and twisting it on its return.

RH.—The same, taking care to pass *Li* within *Ri* loop before passing underneath.

BH.—With back of *l* passed distal to the remaining strings, hook up the *ra t* strings and free the thumbs.

641. *Crab*. Pat. (fig. 259).

BH.—Position 1.

BH.—Take up palmar string from proximal side with opposite *i* and *m*.

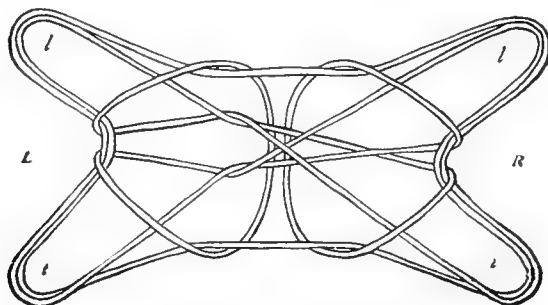


FIG. 259.—Crab. (Patamona.)

BH.—With back of *t* hook up *ra l* string, and with back of *l* hook up *ul t* string.

BH.—Exchange loops at back of *i* and *m*.

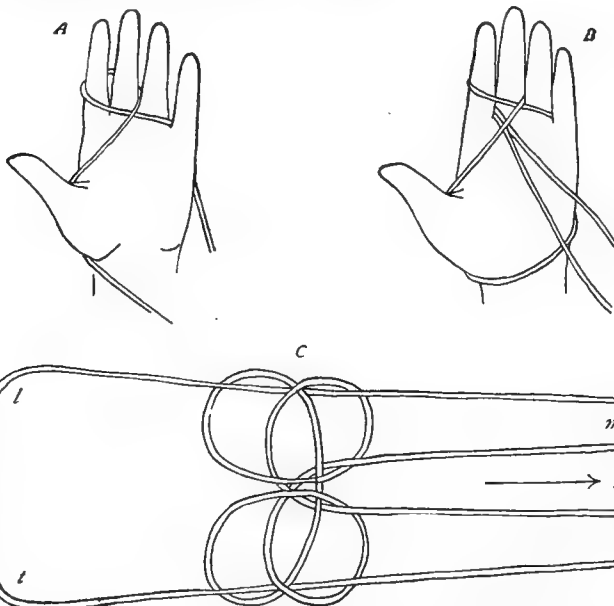


FIG. 260.—Crab. (Warrau.)

BH.—From within this *i* and *m* loop pick up the double *ul t* string, loop off the thumb, and, lifting it over, put it back onto *t*.

BH.—Do the same thing with the double *ra l* string.

BH.—Pass loops at back of *i* and *m* over into palm.

642. Crab. War. (fig. 260).

LH.—String in position 1. Raise palmar string, twist into a loop and place over *i* and *m*. (A) Pass *Ri* under the crossed palmar strings from proximal side and hook out from between their fork the string lying between *i* and *m*, and draw out. (B) Pass this end of the string over *R* wrist.

LH.—Insert *Ri* and *m* under each proximal half of the diagonally crossed palmar strings, from proximal side, and draw them out.

RH.—Remove loop from behind wrist over to front of hand.

RH.—Close. Slightly raise the two loops on back of *i* and *m*; insert in them *Li* and *m*, retain them there, and drop remaining strings off *RH*.

LH.—Close. There are now a proximal and distal loop on back of *i* and *m*. Raise the proximal ones and pass them over the distal into the palm. Insert *Ri* and *m* into the remaining loops on back of *i* and *m*, draw out and open *LH*.

As the hands are gradually separated, the "crab" will crawl from left to right.

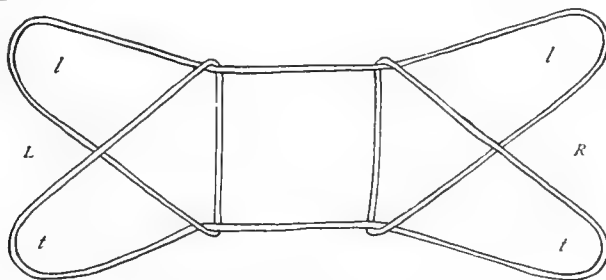


FIG. 261.—Door of house. (Taruma, etc.)

643. Door of house. Tar., Wap. (fig. 261).

Use a comparatively short string.

BH.—Position 1.

LH.—Take up palmar string with *i* of opposite hand, from distal side, twisting it on the return.

RH.—Similar, but being careful to pass the index through the index loop of opposite hand when taking up the palmar string.

LH.—Within index loop pick up the *t* loop, by holding its *ul t* string with the *Ri* and *t*, bring it over and replace on *t*.

LH.—Pick up the *l* loop in similar manner, and replace on *l*.

RH.—Similar action with *t* and *l* loops.

BH.—Slip *i* loop over into palm, and stretch out the two loops remaining.

644. Snake. War. (fig. 262).

String in position 1 on both hands.

Pull out; i. e., loop up the palmar string of *LH* and passing it over (distal to) the *ul* string, wind it twice around both strings, bring-

ing it finally from proximal side, in front, of radial string, and so on to *Rt*.

RH.—Remove loop off *t*, and bend its extremity over upon itself so as to make a double loop of it (*AB*). Place this double loop across

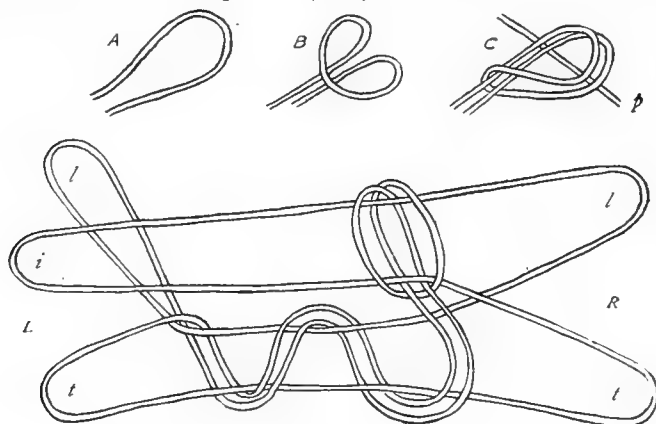


FIG. 262.—Snake. (Warrau.)

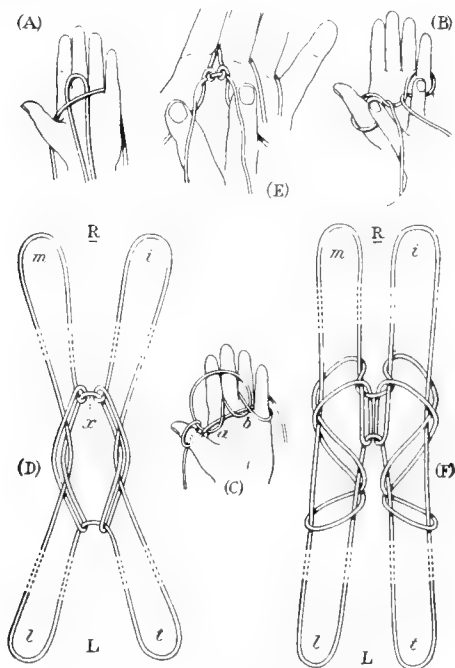


FIG. 263.—Frog. (Patamona, etc.)

palmar string (*C*). With tip of *Li* hook up this palmar string from its proximal side through this same double loop.

645. *Frog*. Pat. (FEL), Mak. (fig. 263 F).

LH.—Position 1. Pass extremity of main loop under (proximal to) palmar string, and draw it out (*A*).

Passing *Ri* and *m* within this loop, pull out from their distal sides respectively the *L ra t* string and the *L ul* string (*B*) and place the loops so drawn out over *Li* and *m*, behind which they are let hang on dorsum of *LH*.

With *Ri* and *m* pull out from distal side the two central loops *a b* on *L* palmar string (*C*).

There are now two loops on *RH*, and four on *LH*, viz. on *t*, *i*, *m*, and *r*.

LH.—The two loops on *RH* are next passed over the *L* dorsal *i* and *m* loops so as to lie proximal to them. Take up the two distal loops with backs of *Rm* and *i* and after drawing out, slip the remaining *Lm* and *i* dorsal loops over into *LH* palm.

There are now two loops on *RH*, i. e., on *m* and *i*, and two loops on *LH*, i. e., *t* and *l*, with a central "diamond" figure (*D*). But this diamond results from the more or less close apposition of four loops.

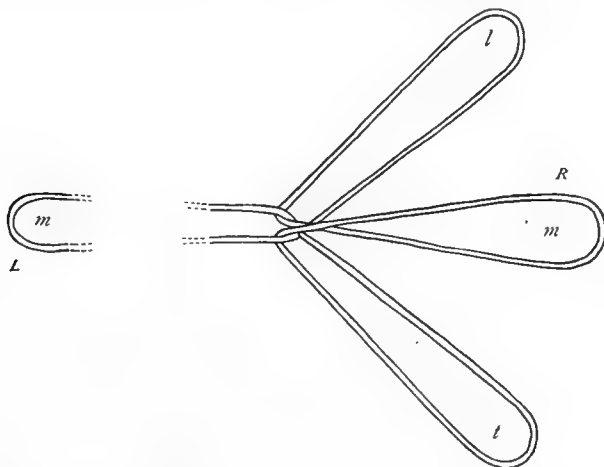


FIG. 264. Palm tree. (Arawak, etc.)

Separate the two loops on the *RH* side of the diamond until they are about three-quarters inch apart, and for the present call *x* the little piece of string which separates them.

Pass the two *RH* loops back again over onto the dorsums of corresponding fingers on *LH* and gently pull on them behind it until the *x* on the palmar surface at bases of *Li* and *m* prevents them being dragged any farther over onto the dorsum.

There now lie on the palmar aspect of the fork between *Li* and *m* two loops on *x* with two distal ends passing between the fork just mentioned and two proximal ends spreading out into the palm. Slip *Rm* and *i* close up and upon the left palm underneath all the other strings, and with them hook onto the two proximal ends from the distal side and draw them out (*E*).

Again place the two *RH* loops over, and proximal to, the *LH* dorsal *i* and *m* loops.

Take up the distal loops on back of *LH* *i* and *m* with backs of corresponding fingers on *RH* and after drawing out, slip remaining loops over into *LH* palm. The frog's legs are characteristic.

646. Palm tree. Ara., Pat., Tau. (fig. 264).

Place string in position 1 on both hands.

RH.—With left *m* hook up *R* palmar string from its proximal side, taking care, while drawing it out, to twist *Lm* out, down, in, and up.

LH.—With *Rm*, passed through *Li* loop, execute a similar manipulation.

LH.—Drop off *t* and *l*. The loops represent fronds.

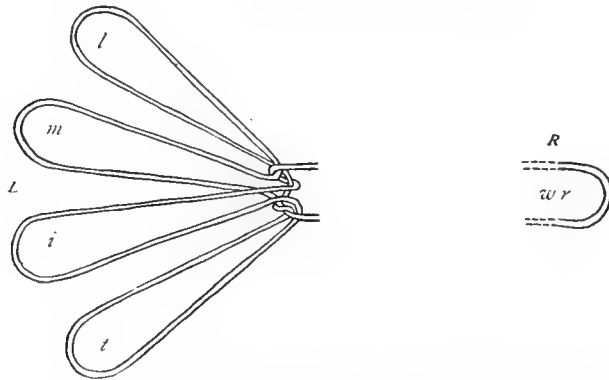


FIG. 265.—Palm tree. (Makusi, etc.)

647. Palm. Wap., Mak., Tau. (fig. 265).

LH.—Position 1. Twist palmar string in the direction of a screw and place it on *t* and *l*. The other end of the string is placed over the right wrist.

LH.—With back of tips of *Ri* and *m* hook up the two halves of the crossed strings from the proximal side so that the "cross" is between these two fingers.

LH.—Remove proximal radial *t* string and proximal *ul* string into palm.

RH.—Remove loops from back of *i* and *m* onto *Li* and *m*, and return sharply.

648. Two palms with intervening path. Car., Mak., Pat., Wap. (fig. 266). Lutz describes the figure as roots, trunk, and tree (FEL).

BH.—String in position 1.

RH.—Pull out palmar string, twist clockwise into a loop (*A*), and place the loop over *t* and *l* (*B*).

LH.—Similarly.

On each hand there is now a distal strand and two crossed proximal strands.

LH.—With the backs of the tips of the *Ri* and *m*, hook up the two halves of the crossed strands from the proximal side (so that the "cross" is between the fingers) and return.

RH.—Similarly, taking care that during the procedure the left *i* and *m* are passed through their corresponding loops on *RH*.

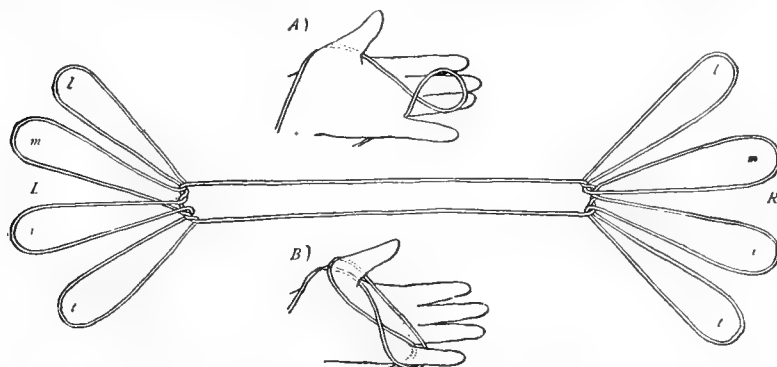


FIG. 266.—Two palms with intervening path. (Carlb, etc.)

BH.—There are now on each *t* and *l* two strings, of which one passes direct from one to the other *t* or *l* respectively.

Pass this direct strand proximal to the other over the dorsum of each *t* and *l*, respectively, into the palm.

Pass the loops at back of *Li* and *m* onto *Ri* and *m*.

On each *Ri* and *m* there are now two loops. Pass the proximal over the distal onto the *Li* and *m*, and separate the hands.

649. Star. Wap., Pat. (FEL) (fig. 267). The completed figure is identical with the spider of the Kaua (Arawak stock) and Kobeua (Betoya stock) of the upper Rio Negro (KG, I, 123; II 130).

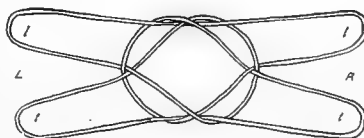


FIG. 267.—Star. (Wapishana, etc.)

BH.—String in position 1.

LH.—Hook up palmar string from distal side with *Ri* twisting it downward, inward, and upward, and return to original position.

RH.—Hook up palmar string from distal side with *Li* in similar manner, taking care to pass *Li* through *Ri* loop.

BH.—Reaching between the strings of the *i* loops from the distal side, pull the *t* loop off the thumbs between the strings of the *i* loops and replace them on the thumbs.

BH.—Treat the *i* loops the same way by reaching between the strings of the *t* loops.

BH.—Also the *l* loops by reaching between the strings of the *i* loops.

BH.—Release the *i* loops and separate the hands.

650. *The Pleiades.* Mak. (fig. 268). A similar figure is reported from the Kaua (Arawak stock), Aiary River (KG, I, 123).

BH.—Position 1.

BH.—Hook up from proximal side the palmar string with backs of *m* and *i* of opposite hand.

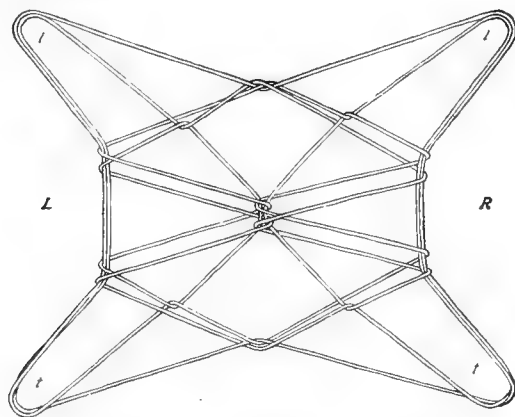


FIG. 268.—The Pleiades. (Makusi.)

BH.—With the back of *t* hook back over intervening strings the *ra l st* onto *ra* side of *t*, and with back of *l* similarly hook back *ul t st* onto *ul* side of *l*.

BH.—With *i* and *m*, well separated, hook up onto their backs the two diagonal strings converging to center.

BH.—From back of *i* and *m* draw the single large loop over into the palm.

BH.—Exchange loops on backs of *m* and *i*.

BH.—There is a double string now on *ra* side of *l* and on *ul* side of *t*.

Through *i* loop, from the distal side, pick up with opposite hand the double *ul t* string with its *t* loop, draw it off *t*, and passing it over *ra i st* drop it back onto *t*.

Through *m* loop, from its distal side, pick up with opposite hand the double *ra l st* with its *l* loop, and passing it over *ul m st* drop it back onto *l*.

BH.—Draw the loops on back of *m* and *i* over into the palm.

The points of the hexagonal figure and its central knot represent the seven stars composing the cluster.

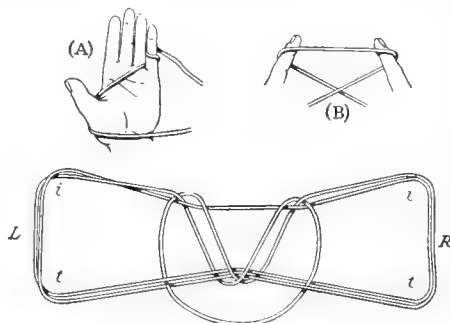


FIG. 269.—The Moon. (Warrau.)

651. Moon. War. (fig. 269). A similar figure comes from the Aiary River (KG, 1, 123).

BH.—String in position 1.

LH.—Wind *ul l* string once around *l* (*A*). Place *Rl* in this new loop from proximal side and draw out.

Get an assistant to hold *ra l* string at its center to draw it over (distal to) *ra t* string, to pass it below (proximal) and bring it up again on *ul* side of the two *ul l* strings; now make a loop at its center and drop this loop over each *i* (*B*).

[In the absence of an assistant, the first part of this operation is done with the mouth.]

BH.—Place *ra l* string over (distal to) *i* loop onto *ra* side of thumb.

BH.—Press *i* through its own loop into the palm, proximal to (below) the palmar strings, drop remaining loops off the other digits and draw out.

Replace *i* by *i* and *t*.

652. The three-bar hammock. Mak. (fig. 270). Double the string and, without any twisting, place it taut on *LH* in position 1, and upon the *L* big toe (*A*). From radial to ulnar side, the strings can therefore be numbered from 1 to 4.

With *Rt* and *i* pick up No. 1, pass it distal to No. 2, and distal to No. 3, and taking up No. 3, drop No. 1. Pass No. 3 distal to No. 4, pick up No. 4 and drop No. 3, and then loop No. 4 onto *Ll*.

There now results a figure (*B*) with two inner strings *ab*, converging from the radial and ulnar sides respectively of the *L* big toe. Pass *a* distal to No. 1, pick up No. 1, dropping *a*, and loop No. 1 onto *Lt*.

You now have your figure *C* with the four direct strings again. Repeat the two procedures alternately as above, until the string is too short to allow of further looping.

Finally take the double loop from off the big toe and slip it onto *Lm* and *r*.

653. Forked sticks, War., Mak.; *Hairpins,* Ara., Car. (fig. 271).

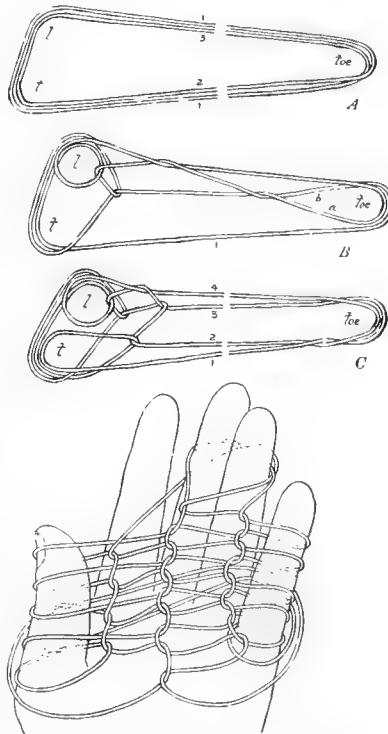


FIG. 270.—The three-bar hammock.
(Makusi.)

BH.—String in position 1, opening A. Exchange *i* loops (sec. 638).

654. *Visitor come and gone.* Mak. (fig. 272).

BH.—Position 1, opening A.

LH.—Place *t* loop on *l* and *l* loop on *t*.

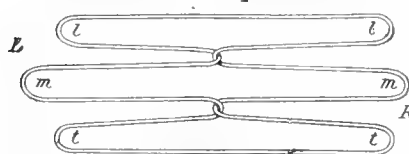


FIG. 271.—Forked sticks, hairpins. (Warrau, etc.)

RH.—Place *t* loop on *l* and *l* loop on *t*.

Pick up the *LH i* loop and place it on *Rm*.

Pick up the *RH i* loop and place it on *Lm*.

Slip *Lm* loop over into the palm and gradually draw out. With this movement the released loop (the visitor) becomes gradually shorter until it is entirely absorbed in the other strings (the visitor is now inside the house.)

Slip *Rm* loop over into the hand and draw out, when the figure will disappear (the visitor has gone!).

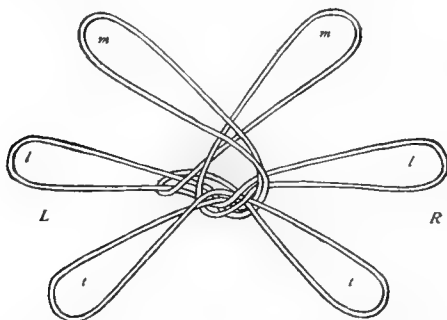


FIG. 272.—Visitor come-and-gone. (Makusi.)

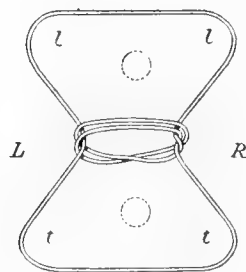


FIG. 273.—Trap, snare. (Taruma.)

655. *Trap, snare.* Tar. (fig. 273).

Use a comparatively short string.

BH.—Position 1, opening A.

Pass *Rl* distal to *R ul l* and *R ul i* strings, but proximal to *L ra i* string, and with back of its tip pick up *L ul t* string.

On the ulnar side of *Rl* there are now two strings—one passing to the center between the palms, another passing to the ulnar side of *Ll*.

Pass *Rl* distal to (over) the former, but proximal to (under) the latter.

Slip loops off *Ll* and both indices over into the palm.

Insert from proximal side the *Ll* into the loop remaining on *Rl*.

It will be noticed that if the visitor puts his finger into either upper or lower loop it can be "caught" by slipping the string off its respective digits (JO).

656. Trap, snare. War., Ara., Mak., Pat., Car. (fig. 274).

Place string on both hands in position 1, opening A.

Take *ul l* string in mouth over distal side of all the other strings, stretch, and so pull loop off each *l*.

Turn both thumbs down into their own loops, at the same time hooking up the *ul i* strings as they are turned upward and outward.

Let go with mouth and extend hands.

Get a spectator to put his hand or finger in the space indicated in the diagram. Slip off the thumb loops, stretch, and he will be caught.

657. Butterfly. War. (fig. 275).

BH.—String in position 1, opening A.

LH.—With *RH* remove loop from off *i* and place over hand onto wrist.

RH.—Similarly. There are now two loops on each hand.

LH.—With tip of *Lt* remove *ra l* string onto *ra* side of *t*, and with tip of *Ll* remove *ul t* string onto *ul* side of *l*. A double palmar string results.

RH.—Similarly.

LH.—Remove loop from back of wrist, bring it over to the front, pass it under the doubled palmar string from its proximal side,

and place it on *i*.

RH.—Similarly.

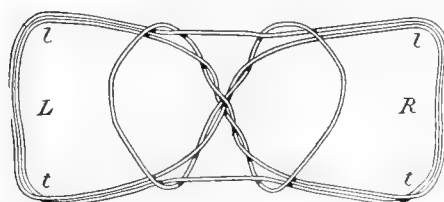


FIG. 275.—Butterfly. (Warrau.)

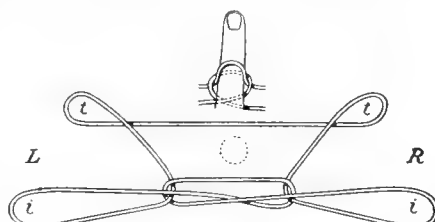


FIG. 274.—Trap, snare. (Warrau, etc.)

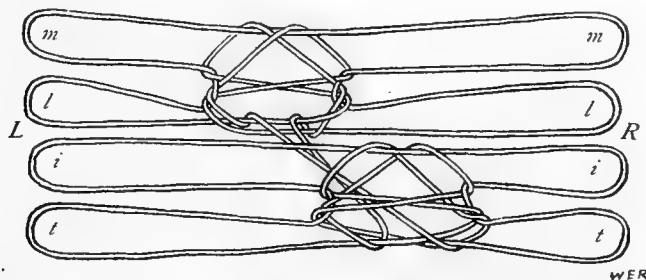


FIG. 276.—Two islands joined by a log. (Warrau.)

BH.—Hook *i* through its own loop into the palm, proximal to the palmar strings, and keep there.

Separate both hands, slipping off all the loops from the remaining fingers.

BH.—Place the double loop remaining onto *t* and *l*, as in position 1.

658. *Two islands, joined by a log.* War. (fig. 276).

BH.—String in position 1, opening A.

BH.—Slip loop off *l*.

BH.—Place *ul i* string behind *l*. In each hand there is now a string crossing the palmar surfaces of *m* and *r*.

LH.—Insert *Rm* from proximal side under this crossed string and draw out.

RH.—Similarly, but taking care to pass *Lm* within *Rm* loop at commencement of the manipulation.

BH.—Pass *ul t* string under (proximal to) and over (distal to) *i* loop, and back onto *t*.

BH.—Pass *ra l* string under (proximal to) and over (distal to) *m* loop back onto *l*.

BH.—Bend hands and exchange loops on backs of *i* and *m* onto corresponding digits of opposite hand.

BH.—Slip *ra t* string off thumb and loop it over *i*. It will be noticed that there are two *ra t* strings on each thumb—one leading

to the center of the figure, the other to the opposite thumb. Choose the latter string.

BH.—Slip *ul l* string off *l* and loop it over *i*. Similarly, there are two *ul l* strings on *l*. Choose the string leading to the corresponding digit on opposite hand.

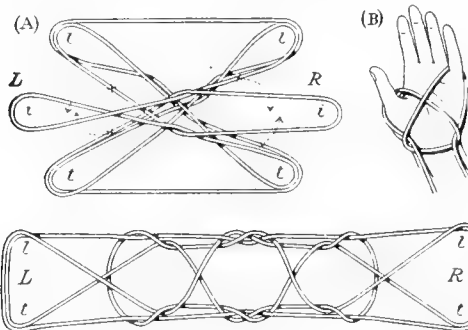


FIG. 277.—The sun between two clouds. (Warrau.)

BH.—Of the two loops on back of *i* and *m*, pass the proximal over the distal into the hand.

659. *Sun, between two clouds.* War. (fig. 277).

BH.—String in position 1, opening A.

BH.—Draw *ul i* string, distal to intervening strings, onto *ra* side of *t*; draw *ra i* string distal to intervening strings onto *ul* side of *l*.

Exchange loops (sec. 638) on *i* (A).

RH.—Within the *i* loop pick up from distal side (or better still, get an assistant to do so) the *ul t* string and radial *l* string. [It will be noticed that there are two *ul t* and two *ra l* strings. Choose the ones which are continuations of the *L* index loop.] Free all three digits of their loops and replace on *t* and *l* the two loops of which the two strings just picked up constitute the respective halves.

LH.—Similarly.

The figure now appears as in (*B*).

BH.—Hook back of *m* under loop, and draw back.

BH.—Exchange these loops.

BH.—Hook *ra l* string, distal to intervening strings, onto *ra* side of *t*; hook *ul t* string distal to intervening strings onto *ul* side of *l*.

Press *m*, through its own loop, proximal to palmar strings, into palm; drop remaining strings off all other digits, and replace *m* by *t* and *l*.

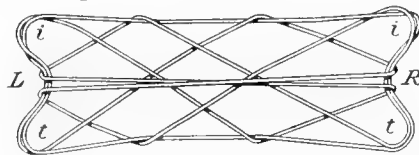


FIG. 278.—Swamp, with log across. Fish under a log. (Warrau, etc.)

660. *Swamp, with log lying across*, War., Aka.; *A fish lying under a piece of wood*. Mak. (fig. 278). Cf. a small arrow among the Tukano (Betoya stock) on Rio Tiquie (KG, I, 253).

BH.—String in position 1, opening A.

BH.—Slip loop off each *l*.

BH.—Place *ul i* string behind *l*.

In each hand there is now a string crossing the palmar surfaces of *m* and *r*.

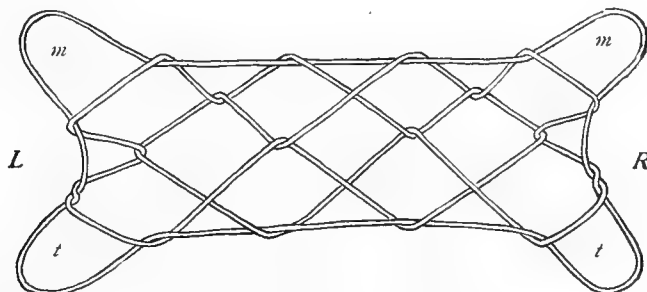


FIG. 279.—Little fishes. (Patamona.)

RH.—Insert *Lm* from proximal side under this same crossing string and draw out.

LH.—Similarly, but taking care to pass the *Rm* through *Lm* loop on commencing the manipulation.

BH.—Passing top of thumb distal to the other strings, hook up *ra l* string onto its *ra* side.

BH.—Similarly, hook up *ul t* string onto *ul* side of *l*.

BH.—Place *i* and *m* into their respective loops, press them, proximal to the double palmar string, into the palms, and slip remaining loops off the other digits.

BH.—Replace *i* and *m* by *t* and *i*, respectively.

661. *Little fishes*. Pat. (fig. 279).

BH.—Position 1, opening A.

BH.—Take loop off *l* and place behind wrist by taking up its *ul l* string and passing it over radial side of wrist.

BH.—Place *ra wr* string proximal to *ra t* string, but distal to all the other strings, onto the back of *l*.

BH.—Pass wrist loop over into palm.

BH.—Drop loops off *i* into palm.

There is now a loop in front of each palm. Pick up that on *R* side with back of *L i*. Within this same loop on *L i* pick up that on *L* side with back of *R i*.

BH.—Through *i* loop pick up *ul t* string and place it distal to *ul i* string onto the back of *m*.

BH.—Drop loop at back of *i* into palm.

BH.—Place *l* loop onto *t* and *i*, so that there are now two loops on each *t*.

BH.—Slip proximal *ra t* string over distal *ra t* string; i. e., over thumb into palm.

In *BII*, in the fork between *m* and *i* there are two strings (*ra m* and *ul i*) crossing each other as they enter the palm. Insert the *m* between these two strings, proximal to the crossing, tightly into each palm.

Each *t* is now in a triangle, one side of which faces it.

BH.—Hook *t* over (distal to) the string facing it, and in this position turn *t* and *m* downward and outward, at the same time slipping the loop off *i*.

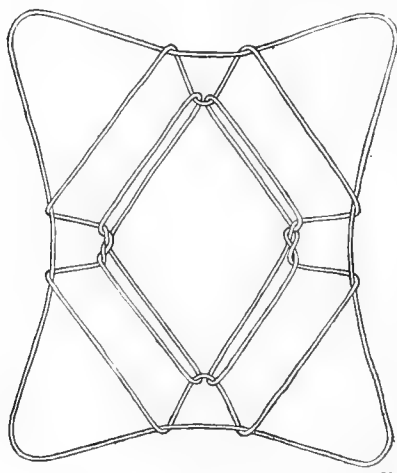


FIG. 280.—Looking-glass. (Makusi, etc.)

662. *Looking-glass*. Mak., Pat. (fig. 280).

BH.—Position 1, opening A. Place *i* loop over *i* and *m*.

BH.—Put *l* loop on *m* and *t* loop on *i*, distal to loops already there.

BH.—Pass the single loop at back of both fingers distal to the double ones (i. e., those on *i* and *m*) and then pass *i* and *m* loops over the single loop (which is kept in place) into palm and draw out.

Get an assistant to throw a second loop over these, as in the sting ray, etc. (sec. 701, fig. 317), and hook the *i* and *m* of each hand (distal to this piece of loop on each side) into their respective loops and draw out, at the same time slipping off those at the back.

In place of *i* and *m* of your two hands holding the four loops, get assistant to help you and let every corner loop be held with a hand.

663. *Skeleton, spirit, ghost.* War. (fig. 281).

BH.—Position 1, opening B.

BH.—Hook *i* over the double palmar string, through its own loop, into the palm, and keep there. Now stretch the hands apart, at the same time slipping off all three loops from the backs of their respective digits, those from off the *t* and *l* being dropped altogether. Replace the top of *i* by inserting the *t* and *l* from proximal side (*A*).

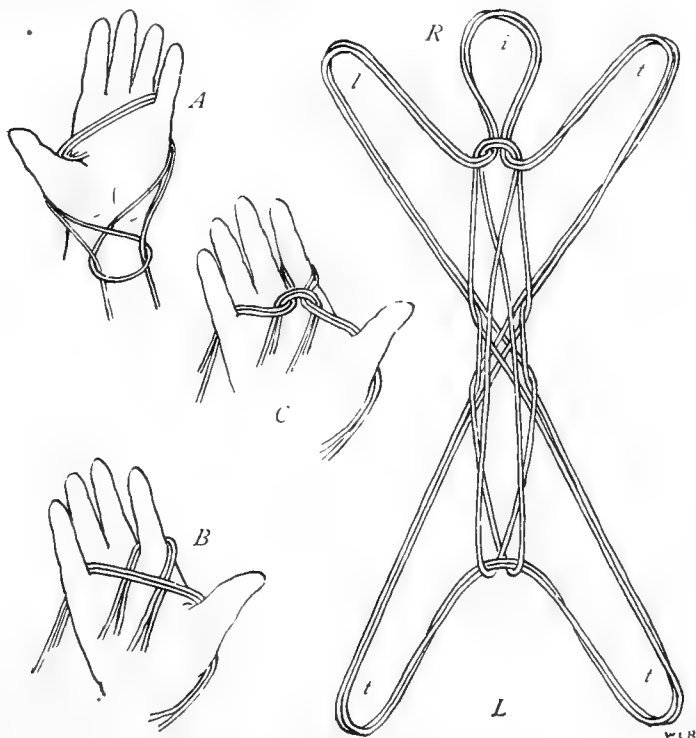


FIG. 281.—Skeleton, spirit, ghost. (Warrau.)

BH.—Hook back of *i* into slip loop from distal side and draw it back.

BH.—Exchange loops (sec. 638) at back of *i*.

BH.—Remove loop from off *i*, pass it from proximal side under the doubled palmar string and replace on *i*.

LH.—Raise loop on back of *i*, insert *Rm* in it, and draw out.

RH.—Remove the loop just placed on *m* and pass it from proximal side under the double palmar string and place it on *i*. Remove this double loop from *i*, but within it, and while doing so catch up the double palmar string and place it on *i* (*B*, *C*).

664. *Any piece of flat board.* War. (fig. 282).

BH.—String in position 1, opening B.

BH.—Hook *i* over distal side of double palmar string, through its own loop, into the palm and keep there. Now stretch the hands apart, at the same time slipping off all three loops from the backs of their respective digits, those from off the *t* and *l* being dropped

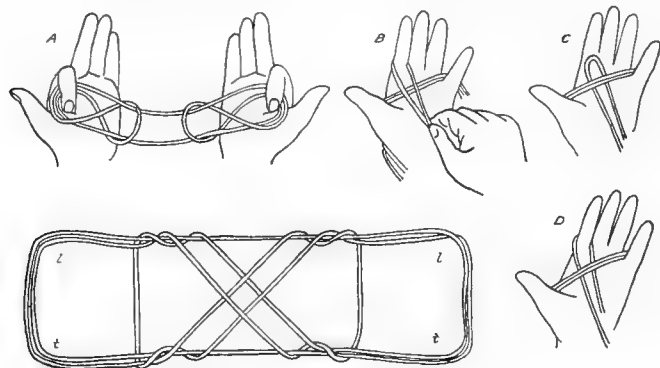


FIG. 282.—Any flat piece of board. (Warrau.)

altogether. The figure now consists of two double loops lying on the distal side of two transverse palmar strings (*A*).

BH.—Replace top of *i* by inserting the *t* and *l* into the double loop from the proximal side.

BH.—Catch up the slip loop with back of tip of *i* and draw it back.

LH.—Close. Raise loop from back of *i*, insert *Ri* in it, and draw out. Open *LH*.

RH.—Close. Raise proximal loop over distal on back of *i*, insert *Li* in it and draw out. Open *RH*.

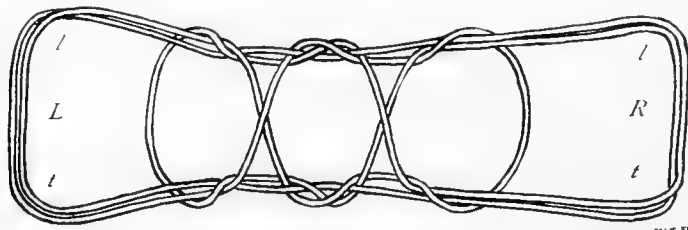


FIG. 283.—Beetle. (Warrau.)

LH.—With *R t* and *i* lift off the *i* loop by holding it at its base (*B*), and pass it from proximal side under the double palmar string (*C*) and replace on *i* (*D*).

RH.—Similarly.

BH.—Hold down the *i* through its own loop, proximal to palmar string, into the palm. Hold there, separate hands, loosening at the same time all the other loops, and replacing *i* by *t* and *l*.

665. Beetle. War. (fig. 283). This figure is practically identical with that of the Sun (sec. 659), although commenced with a different opening.

BH.—String in position 1, opening B.

BH.—Hook *i* over distal side of double palmar string, through its own loop into the palm, and keep there. Now stretch the hands apart, at the same time slipping off all three loops from the backs of their respective digits, those from off the *t* and *l* being dropped altogether. The figure now consists of two double loops lying on the distal side of two transverse palmar strings, as in figure 282 A.

Turn over the whole figure on its own axis so that the double loops lie on the proximal side of the two transverse strings.

BH.—Replace top of *i* by inserting the *t* and *l* into the double loop from the proximal side.

Continue now exactly as with the board (sec. 664, fourth paragraph). The three loops represent the insect's head, thorax, and abdomen, respectively.

666. The "quake" or basket. War. (fig. 284).

BH.—String in position 1, opening B.

LH.—Close. Raise loop on back of *i*, and inserting *Ri* in it, draw it out and open *LH*.

RH.—Close. Raise proximal over distal loop on back of *i*, and inserting *Li* into proximal one, draw it out and open *RH*; i. e., "exchange" loops (sec. 638).

LH.—With *Ri* and *t* passed within *Li* loop, take up the double *ul t* and *ra l* strings, remove the *t* and *l* loops from off their respective fingers, letting the *i* loop drop off the hand altogether in the process, and replace them.

RH.—Similarly.

LH.—Insert *Ri* from proximal side under the double palmar string at its center and draw out.

RH.—Similarly.

667. Bird's nest. War. (fig. 285).

BH.—Place string in position 1, opening C.

BH.—Release *t* loops, and place *ra l* strings on *ra* side of *t*.

LH.—Draw out palmar string by inserting *Ri* from proximal side, and pull out.

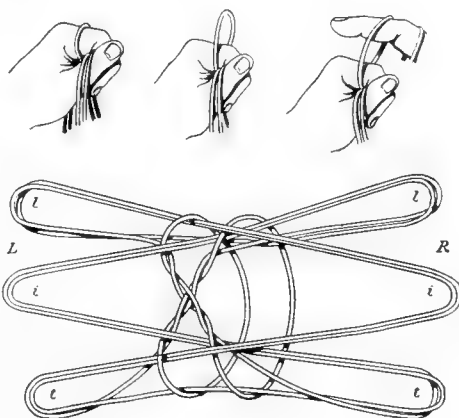


FIG. 284.—Quake or basket. (Warrau.)

RII.—Similarly, but taking care that *Li* passes through *Ri* loop during the process.

Draw *ul l* string, at center, on proximal side of all the others, into the mouth and hold there, and release both *l* strings.

BII.—Remove *t* loop (distal to *i* loop) onto *l* of same hand. Place both indices within mouth string from its distal side, and hooking up the string with a down-and-inward twist of each index, stretch out.

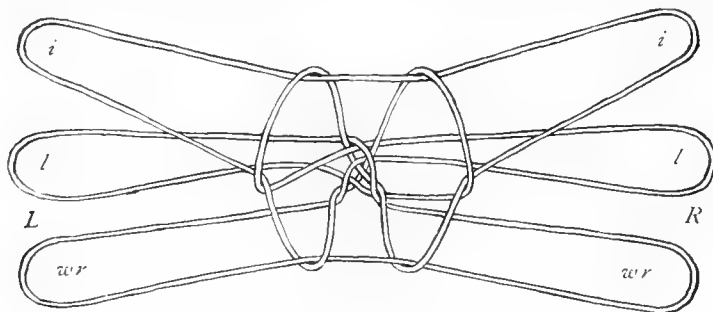


FIG. 285.—Bird's nest. (Warrau.)

Let go the mouth string.

There are now two loops on each *i*.

LH.—Close. Draw proximal loop over distal into palm and leave there, but do not separate the hands. Open *LH*.

RII.—Similarly. Separate the hands.

668. *Corial*. War. (fig. 286).

BH.—String in position 1, opening C.

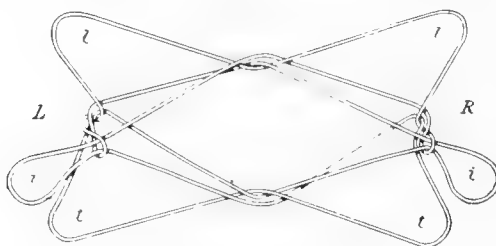


FIG. 286.—Corial. (Warrau.)

Taking *ul l* string at its center, pass it with mouth under *ra t* string also at its center, and keep in mouth.

BH.—Slip each *l* out of its loop and pull on mouth. When this is done it will be noticed that the mouth string curls up into a loop on itself.

BH.—Place each *l* into the loop on mouth string from its distal side and turn them up so that each may catch a string of this loop, and let go the mouth string.

Take *ra t* string up at its center with the mouth over, i. e., distal to, all the other strings, except, of course, the *ul l* string.

BH.—Remove loop from off *t* and replace on *i*.

BH.—Place *t* from proximal side within mouth string. Loose string from mouth.

BH.—Replace loop from back of wrist onto *i*.

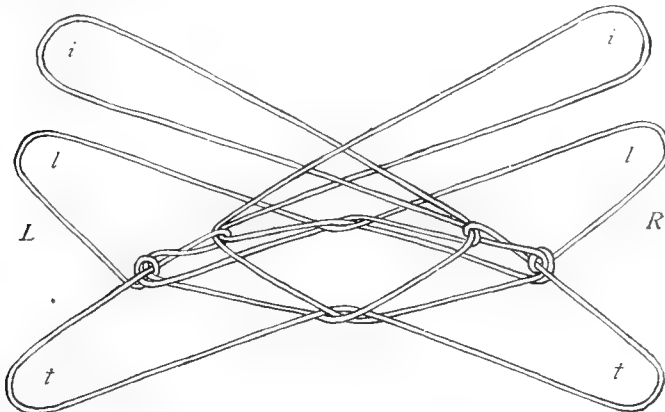


FIG. 287.—Bird's breastbone. (Warrau.)

LH.—Close. Raise proximal loop on back of *i* and pull it over into palm and open *LH*.

RH.—Similarly. Separate hands.

669. *Bird's breastbone*. War. (fig. 287). The Warrau usually describe this as the breastbone of the marudi (*Penelope* sp.), whence they derive their name for cat's-cradle figures in general (sec. 623).

Start with completed figure of corial.

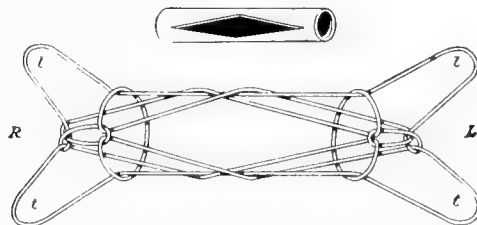


FIG. 288.—Honey. Hollow tree trunk. (Warrau.)

LH.—Close. Raise loop on back of *i*, and inserting *Ri* in it, draw it out, and open *LH*.

RH.—Close. Raise proximal over distal loop on back of *i*, and inserting *Li* into proximal one, draw it out, and open *RH*.

670. *Honey, hollow tree trunk, etc.* War. (fig. 288). The figure is intended to show not only the hollow tree trunk but also the aperture whence the honey is extracted.

Start with completed figure of breastbone.

LH.—With *RH* pick up within the *i* loop, from distal side, the *ul t* string and *ra l* string. Free all three digits of their loops, dropping the *i* loop altogether but replacing those on *t* and *l*.

RH.—Similarly.

671. *Four fish "marching."* Aka., Ara., Mak., Wap., Pat. (FEL) (fig. 289).

BH.—Position 2.

LH.—Hook *ul* string, drawn proximal to *ra* string, over *l*.

LH.—Insert *Rl* under *ra l* string, from proximal side, and draw out.

BH.—Shift loop from back over wrist onto *i*.

BH.—Hook up *ra l* string distal to intervening strings, so as to get it onto *ra* side of *t*.

BH.—Place *i* loop over *i* and *t*. Slip thumbs inside their own loops downward, toward you, and upward again.

BH.—Passing *i* through triangle in front of *t*, press it into the palm, at the same time slipping *l* out of its own loops.

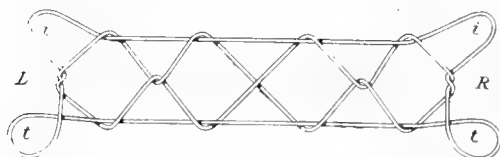


FIG. 289.—Four fish "marching." (Akawai.)

Now rotate the hands down, away from you, and up again, so that their backs face you, at the same time stretching *i* and *t* apart as much as possible.

672. *Monkey.* War., Ara., Pat., Mak. (fig. 290). *Caterpillar* of the Rio Aiary (KG, I, 23).

LH.—Position 2. Loop its extremity over the *L* wrist held horizontally (*A*); place the right wrist vertically into the two dependent loops; separate hands and place them in usual position; i. e., on the same horizontal level.

RH.—Rotate the wrist once inward, downward, and upward.

LH.—Similarly.

A "St. Andrew's cross" kind of figure is now produced (*B*).

RH.—Pick up the convergent strings *ab*, place them on either side of *i* and *m*, and bring them out from the fork between these same two fingers.

LH.—Similarly.

BH.—Pass cross loops at backs of wrists over fingers onto the palms. There are now two loops on each hand.

RH.—Passing *t* over, i. e., distal to *i* loop and *ra m* string, hook up *ul m* string onto radial side of *t*. Passing top of *l* distal to *ra m* and *ul i* string, hook up *ra i* string onto *ul* side of *l*.

LH.—Similarly.

LH.—Close. Raise loops on back of *i* and *m*. Insert into them *Ri* and *m*, draw out and open *LH*.

RH.—Close. Raise proximal over distal loops on back of *i* and *m*. Insert *Li* and *m* into the former loops, draw out, and open *RH*.

By working the *t* and *l* of each hand out and in, the monkey penis or "caterpillar" can be made to elongate and retract.

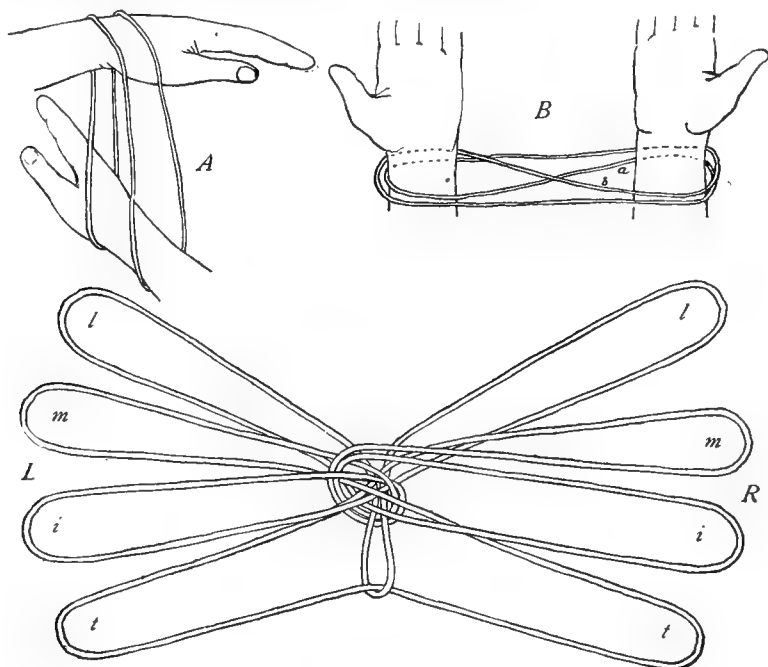


FIG. 290.—Monkey. Caterpillar. (Warrau, etc.)

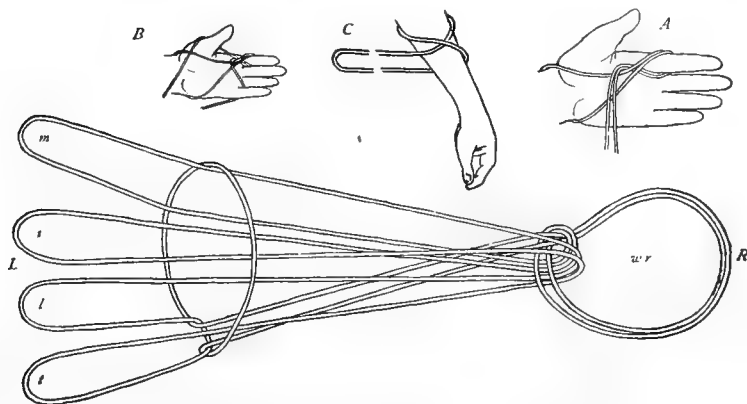


FIG. 291.—Modern type of fish trap. Creel. (Warrau.)

673. *Fish trap, creel.* War. (fig. 291). Wapishana, Makusi, and Patamona (FEL) have a variation in that they loop the ulnar string, proximal to the radial, over the wrist again (*C*) instead of just placing it behind. The result is that the completed figure has a double-crossed ring instead of a single one around it.

LII.—Position 2. Bring the *ra* and *ul* strings up in front on radial side around *i*, and returning pass them through (under) their own loop (*A*). Of the two strings emerging from this loop, place one behind *l* and the other behind *t* (*B*). Slip *Ri* and *m* from proximal side under these two palmar emerging strings, raise, and draw out.

LH.—Close. Take the double loop off back of *i* and place it over *R* wrist. Open *LH*.

RH.—Close. Raise loops behind *i* and *m*; insert *Li* and *m* in them, and draw out. Open *RH*. Remove loop from off *L* wrist over hand into palm.

674. *Fish trap, creel—the old type with big funnel. Pat. (fig. 292).*

LH.—Position 2.

Wind the *ra* wrist string round left wrist behind the ulnar one (*A*), and bring the whole string up on *L* palm on either side of *i*

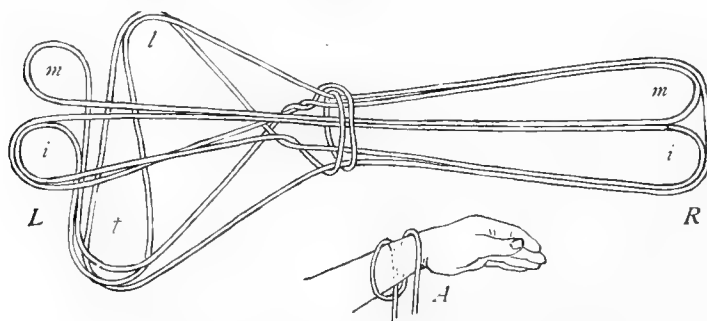


FIG. 292.—Old type of fish trap. Creel. (Patamona.)

and *m*, back through the fork between *i* and *m*, and then behind *t* and *l*, respectively.

Place free end of the string over *Ri* and *m*. With back of *Ri* and *m* pick up from proximal side the loops on *Li* and *m* and return. Pass crossed loops on back of *L wr* over into palm. Pass *Ri* and *t*, on radial side of strings emerging from forks between *i* and *m*, under these strings as well as under that emerging between *m* and *r*, and, picking up the *L ra l* string, place it on back of *Li*.

Pass *Ri* and *t*, on ulnar side of strings emerging from fork between *Li* and *m*, under these strings as well as under the *L ra i* string, and, picking up *L ul t* string, place it on *Ll*.

Pass *Ri* and *t*, on radial side of *L ra i* strings, under these as well as under the *L ul i* strings, and, picking up the *ul m* string proximal to the palmar string, place it on *Lt*.

Pass *Ri* and *t* on radial side of *L ra i* strings, under these as well as under the *L ul i* strings, and, picking up the horizontal string as it crosses the base of *Lr*, place it also on *Lt*.

675. *Bird trap*. Mak., Pat. (FEL) (fig. 293).

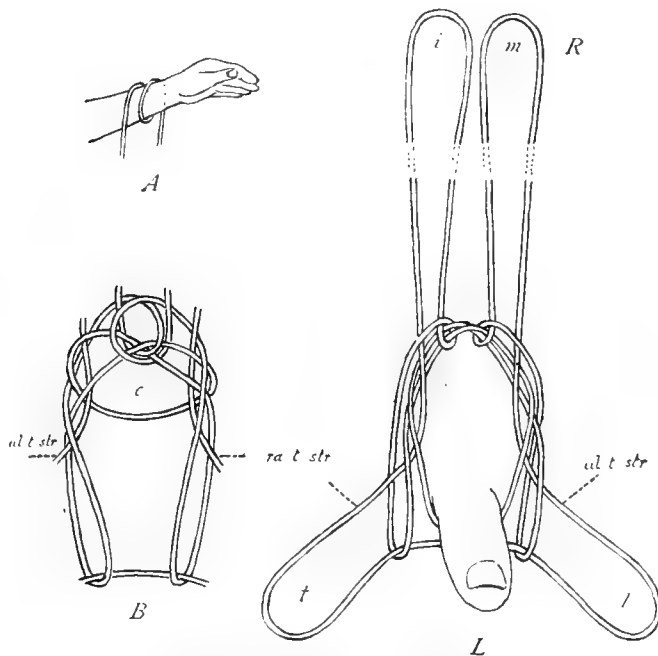


FIG. 293.—Bird trap. (Makusi, etc.)

LH.—Position 2. Take another turn with radial string around wrist (A). Pass ends of string over palm onto *ra* and *ul* sides of *i* and *m*, respectively, then between the fork of these two fingers, and then behind *t* and *l* again to the front.

With *Ri* and *m* take up from proximal side and draw out the loops in front of *Li* and *Lm*.

Bring the crossed loops at back of *L* wrist over into the palm. Place the loops on *Ri* and *m* onto *Li* and *m* distal to the loops already there, and pass the proximal loops over them into the palm. Place the loops remaining on back of *Li* and *m* onto *Ri* and *m*, draw out and then, with tip of *Li* pull down the free central loop which will be found there. This free central loop (*c*) can be identified at the upper (distal) extremity of the "church-window" figure (B) and

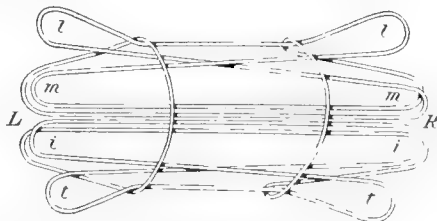


FIG. 294.—Banab. Temporary bush-shelter. (Warrau, etc.)

passes around, from proximal surface, the *L ra t* string and the *L ul l* string.

676. *The "banab," or temporary bush shelter.* War., Ara., Wap., Pat. (fig. 294). The completed figure is intended to show the more or less convex thatched roof, made of cross sticks and leaves.

String on both hands in position 2, opening A.

BH.—Of the two strings emerging from between *i* and *m*, pass the radial over the front of *i* onto the back of *t*, and pass the ulnar over the front of *m* and *r* onto the back of *l*.

LH.—Pass *Ri* and *m* under the two distal strings from their proximal side.

RH.—Same with *Li* and *m* but at the same time taking care to pass them through their respective loops on *LH*.

BH.—Pass loop from behind each wrist over hand into palm.

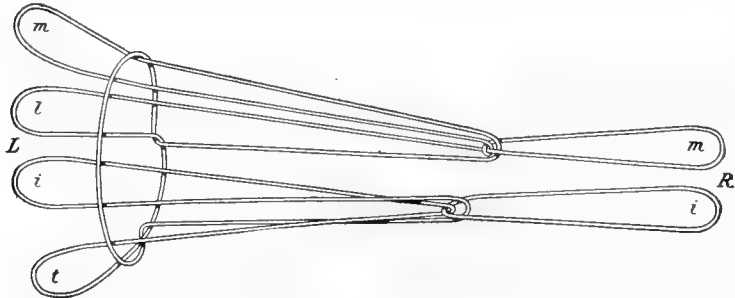


FIG. 295.—Two fish traps. Creels; two-post house. (Warrau, etc.)

677. *Two fish traps, creels.* War. (fig. 295). Waiwai and Parikuta call this figure a *two-post house* (JO).

LH.—Position 2, opening A.

Of the two strings emerging from between fork of *i* and *m*, pass the radial over front of *i* onto back of *t*, and the ulnar over the front of *m* and *r* onto back of *l*. Raise the palmar *ra i* and palmar *ul m* strings, insert under them, from proximal side, the *Ri* and *m*, and draw out.

BH.—Exchange loops on these two fingers with those on opposite hand respectively.

LH.—Pull wrist string over hand into the palm.

678. *Jawbone of acouri, Aka.; old man's legs hanging out of a hammock, War.; baboon's voice box, Wap., Mak., Ara., Pat.* (FEL) (fig. 296).

LH.—Place string in position 2, opening A. Of the two strings emerging from the fork, place the radial in front of *i* and behind *t*. Place ulnar in front of *m* and *r* and behind *l*.

RH.—Place other end of string behind wrist.

LH.—Insert *Ri* and *m* from proximal side under the two palmar strings emerging from fork between *Li* and *m*.

LH.—Pull loop from back of wrist right over fingers into palm.

RH.—Close. Raise the two loops on back of *i* and *m*, insert into them the left *i* and *m*, but do not separate the hands. Open *RH*.

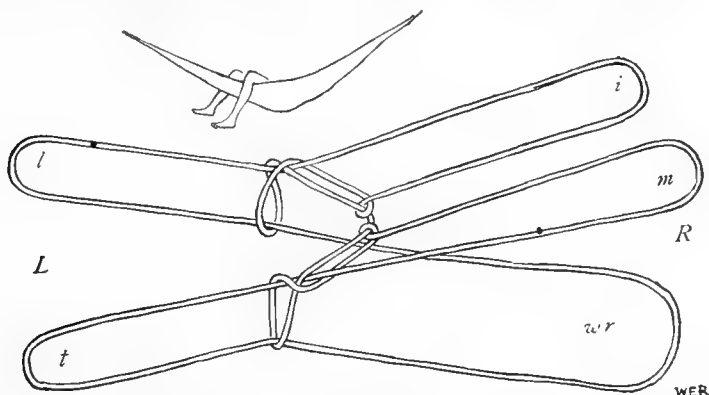


FIG. 296.—Old man's legs hanging out of hammock. Acouri jawbone. Baboon's voice box. (Akawai, etc.)

LH.—Close. Pass proximal loops on back of *i* and *m* over the distal ones into the palm, and leave them there. Raise the two remaining loops on back of *i* and *m* and insert in them the *Ri* and *m*. Open *LH*.

679. *Old man's legs drawn up into hammock.* War. (fig. 297).

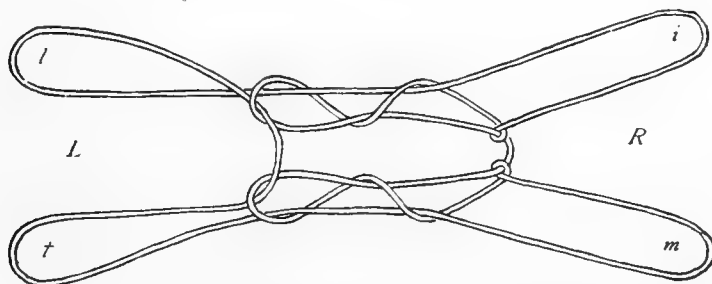


FIG. 297.—Old man's legs drawn up into hammock. (Warrau.)

Start with completed figure of *old man's legs hanging* (sec. 678) and pass the wrist-string over back of right hand into the palm.

680. *Corial.* Mak., Pat. (fig. 286).

BH.—Position 2, opening A.

BH.—Of the two strings emerging from between *i* and *m*, pass the radial over the front of *i* onto the back of *t*, and the ulnar over the front of *m* and *r* onto the back of *l*.

BH.—Exchange loops on wrists.

BH.—Place *m* loop on *i* distal to the loop already there.

BH.—Slip proximal loop over distal loop off back of *i* onto palm.

BH.—Bring loop behind *wr* onto *i*, distal to the loop already there, and slip the proximal loop over it into the palm.

The completed figure is identical with the corial of the Warrau (sec. 668).

681. Door. Ara., Pat. (FEL), Mak. (fig. 298).

LH.—Place string in position 2, opening A, and manufacture exactly like acouri jawbone (sec. 678), except that there is no string placed on the back of the right wrist.

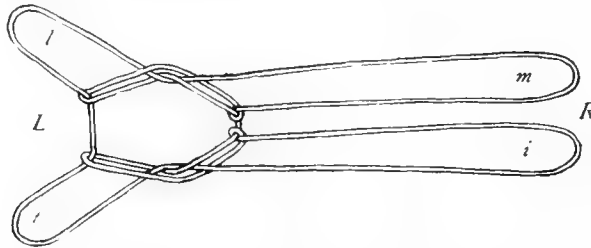


FIG. 298.—Door. (Arawak, etc.)

682. Bat. Mak. (fig. 299).

LH.—Position 2, opening B.

Place *ul m* string onto back of *t*. Place *ra i* string onto back of *l*. Insert *Ri* and *m* into these two last loops from proximal side and draw out. Draw loop at back of wrist over into palm.

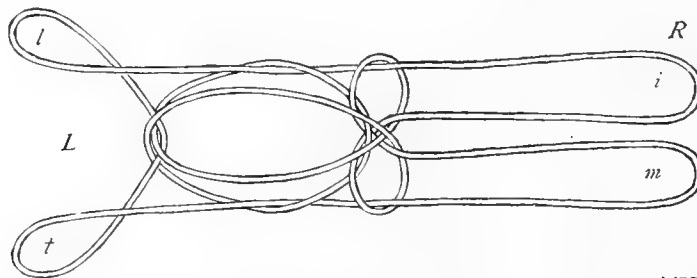


FIG. 299.—Bat. (Makusi.)

WER

RH.—Put the loops at back of *i* and *m* onto *Li* and *m* distal to those already there.

LH.—Draw proximal loops on *i* and *m* over the distal ones into the palm. Place the remaining loops on *Ri* and *m*, and extend gently, and do not drag too tight. The two loops represent the creature's ears.

683. Silk-cotton tree. War. (fig. 300).

BH.—Place string in position 2, opening B.

BH.—Place *ul i* string over *l*, and the *ra m* string over *t* (A).

BH.—Exchange the loops on backs of *i* and *m* with those on corresponding digits of opposite hand.

LH.—With *RH* take off the two loops on *i* and *m* simultaneously; i. e., hold the two strings emerging from the fork of *i* and *m* by means of *Ri* and *t*. Place these two loops in close apposition, so as to make one doubled loop of them, and replace this same doubled loop on *i* and *m*.

RH.—Similarly.

684. *Eagle's nest in the silk-cotton tree.* War. (fig. 301).

Start with completed figure of silk-cotton tree.

BH.—Remove *ul t* string, and place it, distally to double *ra i* string, behind *i*. Place *ra l* string in front of *r* but behind *m*, distally to double *ul m* string, so as to emerge on *ra* side of *m*.

BH.—Exchange double loops on backs of *i* and *m* with corresponding loops on opposite hand.

LH.—With *Ri* and *t*, remove simultaneously the *i* and *m* single loops, i. e., by catching hold of the two strings from the distal side

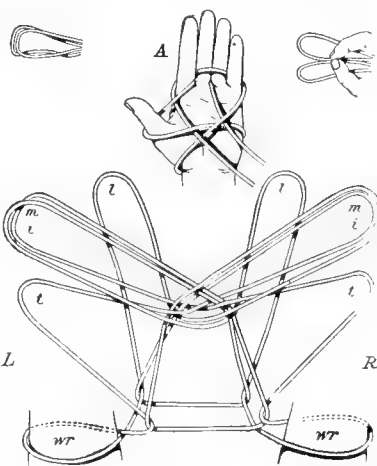


FIG. 300.—Silk-cotton tree. (Warrau.)

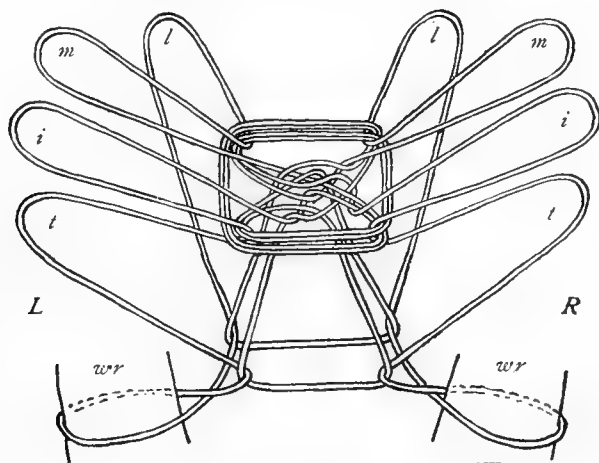


FIG. 301.—Eagle's nest in silk-cotton tree. (Warrau.)

as they emerge from between the fork of *i* and *m*; slip the *i* and *m* out of their surrounding double-loop, which is now allowed to drop into the palm, and replace on *i* and *m* the single loops.

RH.—Similarly.

685. *Four eaglets in nest in silk-cotton tree.* War. (fig. 302).

Start with completed figure of eagle's nest in silk-cotton tree.

BH.—Slip the *i* and *m* out of their loops, but do not now draw the hands apart: it is these four loops which represent the birds. To indicate their having flown, the hands are drawn apart and the figure comes to nought.

686. *Night clouds and daylight.* Pat. (figs. 303, 304).

A long string is required.

LH.—Put loop on back of wrist, bring round over palm on radial and ulnar side of *i* and *m*, respectively, back again through the fork between these digits, taking care to cross the strings at the fork, and then behind *t* and *l*. It is really position 2, opening B, with strings crossed at the fork.

Pull out loops in front of *i* and *m* with *Ri* and *m* passed proximal to them.

Draw the loop at back of *L* wrist over into the palm (fig. 303 A).

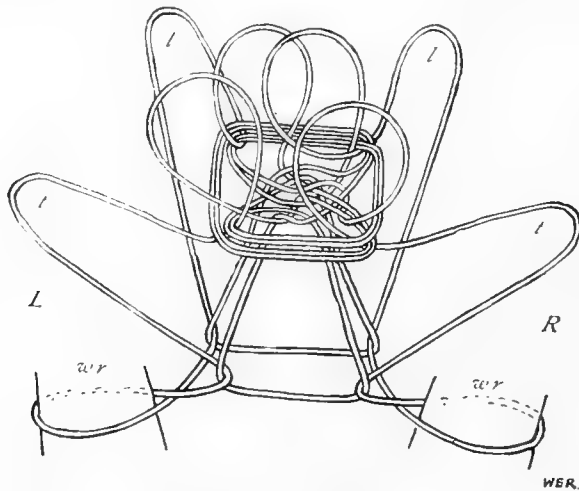


FIG. 302.—Four eaglets in nest in silk-cotton tree. (Warrau.)

687. Place the *Ri* and *m* loops onto *Li* and *m* distal to the loops already there, but before letting loose with *RH*, and while stretched taut in position, hook up the *ra m* string with back of *Lt*, and the *ul i* string with back of *L l* (*B*). Drop strings off *RH* and extend *Lt* and *l*. Insert now the *Ri* and *m* within the *ra i* and *ul m* strings (of the distal set of loops), and from the proximal side hook them back and draw out (*C*). Close *LH* and pass the proximal loops, on back of *i* and *m*, over the distal ones, and drop over into the palm.

Again place the loops from *Ri* and *m* onto *Li* and *m*, repeating the process identically with preceding paragraph.

688. It will be noticed that there is a set of three loops on back of *t* and *l*. Now, of each set, *one* has to be slipped over the others into the palm, but to discover the particular one requires a little care. Examine the figure on the palm (*D*), and at the base of the fork of

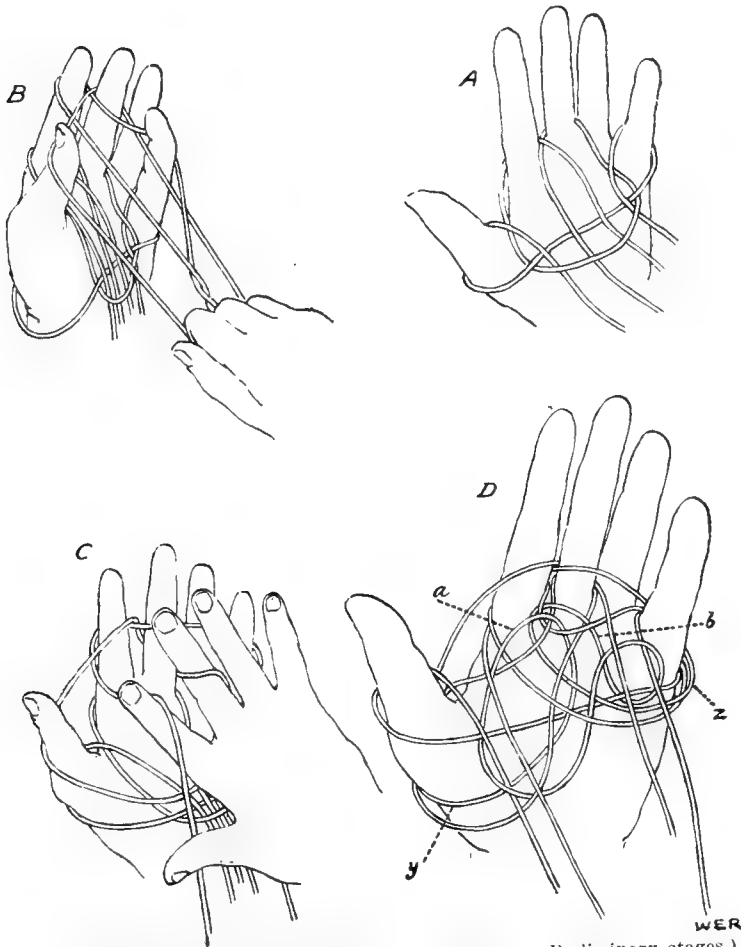


FIG. 303.—Night clouds and daylight. (Patamona) (Preliminary stages.)

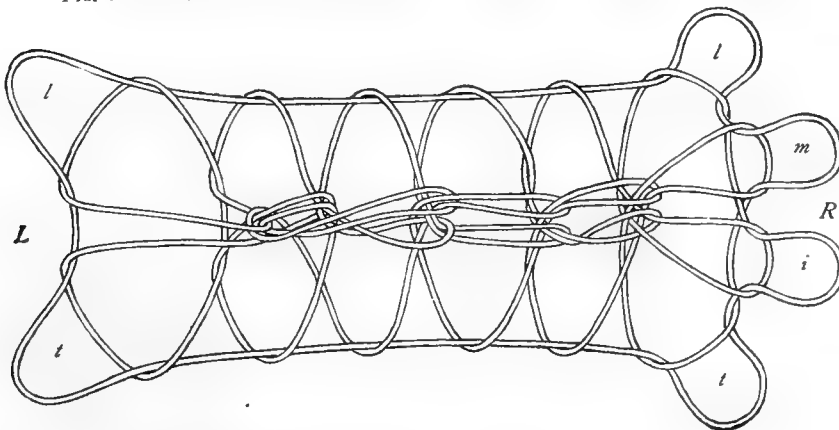


FIG. 304.—Night clouds and daylight. (Final stage.)

i and *m* look for the two free loops that were last manufactured. Trace the radial one *a* around to the thumb, and the ulnar *b* around to the little finger, which will lead you to the two loops *y* and *z* required. Slip these over the *t* and *l*, respectively, into the palm. Close *LH* and pass proximal loops on back of *i* and *m* over the distal ones and drop into the palm.

689. Now, again, place the two loops from *Ri* and *m* onto *Li* and *m* distal to the loops already there and follow the procedure described in paragraph 687.

Next follow the procedure described in paragraph 688 and so repeat the two processes alternately so far as the length of string will allow.

Finally, shift the loops off *Ri* and *m* onto *Rt* and *l*, pick up the loops from off *Li* and *m* so as to place them on *Ri* and *m*, and, from off *Lt* and *l*, slip the distal loop; i. e., the one not formed by a continuation of the *R ul l* and *R ra i*, respectively.

Now, draw out the hands gently, when the night clouds will make their appearance, and finally drop the loops off *Ri* and *m*, when the clouds will roll away, one after another, into daylight.

690. *Bush, palm trees.* Ara. (fig. 305).

BH.—Position 3.

Keeping the left hand still, wind *RH* around back of the *L* wrist, starting from its radial side, and into the loop so formed pass the *RH* again (*A*).

BH.—Place *l* in *t* loop and flatten out the hand. On each hand there is now a palmar string.

LH.—With *Rm* pick up palmar string, from proximal side, and draw out.

RH.—Similarly, taking care that *Lm* passes through *Rm* loop during the manipulation.

BH.—Pull the double loop from off back of wrist, over the hand, into the palm.

691. *Dragon fly.* Ara., Car., Tar. (fig. 306).

BH.—Position 3.

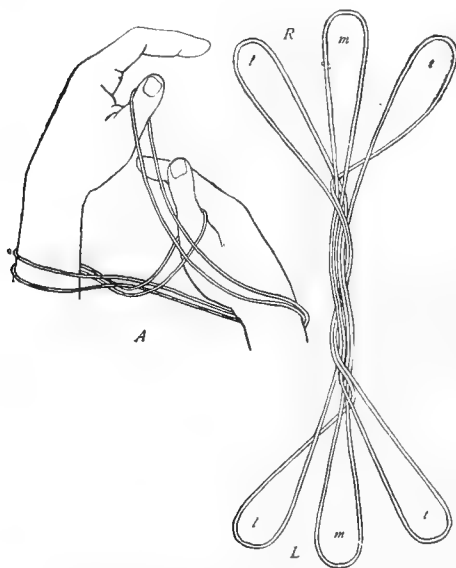


FIG. 305.—Bush; palm trees. (Arawak.)

Keeping *LH* still, wind *RH* around back of *L* wrist, starting from its radial side; hook up the loop so formed with the little finger (*A*) and return. With *Ll* hook up *Rt* loop and return. Pull double loop from off back of wrist over hand into palm and return.

692. *Cow fly*. War., Pat. (FEL), Mak. (fig. 307).

A figure very similar to the dragon fly of the Arawak.

RH.—Position 3, but loop placed behind the dorsum.

LH.—Position 3. Remove loop from *t* and place it behind dorsum onto *l* (*A*).

LH.—With *Rl* hook up from distal side the two strings at back of *Ll*.

With *Lt* and *i* pick up the two strings at back of *R* wrist, pass them over the *RH* and place them on *Lt*.

Pull loop at back of *L* wrist over into palm.

This figure, on drawing out the hands, loosening and tightening, makes a slipknot and represents the cow fly.

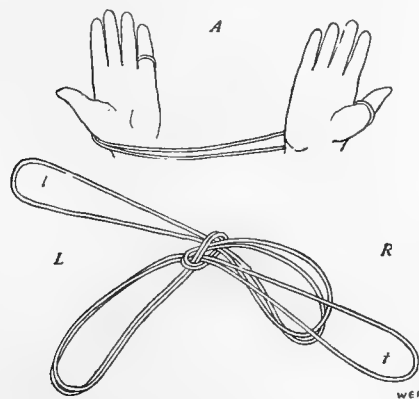


FIG. 307.—Cow fly. (Arawak, etc.)

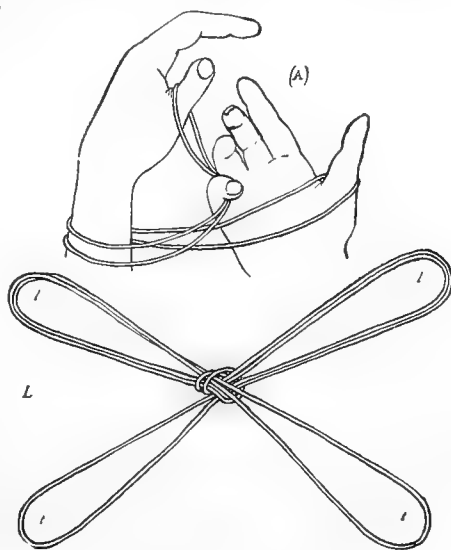


FIG. 306.—Dragon fly. (Arawak, etc.)

Slip the double loops off *Rl* and *Lt*, stretch out the hands and the fly has flown.

693. "*Yarrau*" fish. War. (fig. 308).

BH.—Position 3, opening A.

LH.—With *Ri* hook up the dorsal string from behind, from proximal side, through fork between *t* and *i*, and draw out, but remember during the extension to twist this loop on itself (*A*).

RH.—Similarly.

LH.—Remove distal *i* loop and replace on *l*.

RH.—Similarly. Remove loop from *t*, twist it on itself, and replace (*BC*).

LH.—Place *ra l* string, distal to intervening strings, on *ra* side of *t*. Place *ul t* string, distal to intervening strings, on *ul* side of *l*.

LH.—Close. Take up loop from back of *i*, draw out and place on *RH* over *t* and *l*; i. e., in position 1.

RH.—Take off proximal loop from *l*, and, passing it from proximal side under palmar string, replace it on *M*. Put *ul t* string, distal to intervening strings, on *ul* side of *l*. Hook *i* and *m* through their own loops, proximal to palmar string, into palm, and keep there. Slip strings off *t* and *l*, and separate hands.

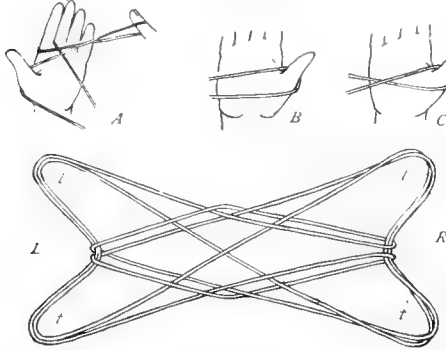


FIG. 308.—Yarrau fish. (Warrau.)

by a double palmar string. Remove *ra* loop by slipping out *t*, and so releasing it from palmar string. Twist the loop thus removed

RH.—Replace *i* and *m* by *t* and *l*, which are inserted into the loops from proximal side. There are now on the right hand two central loops, a *ra* and *ul*, suspended

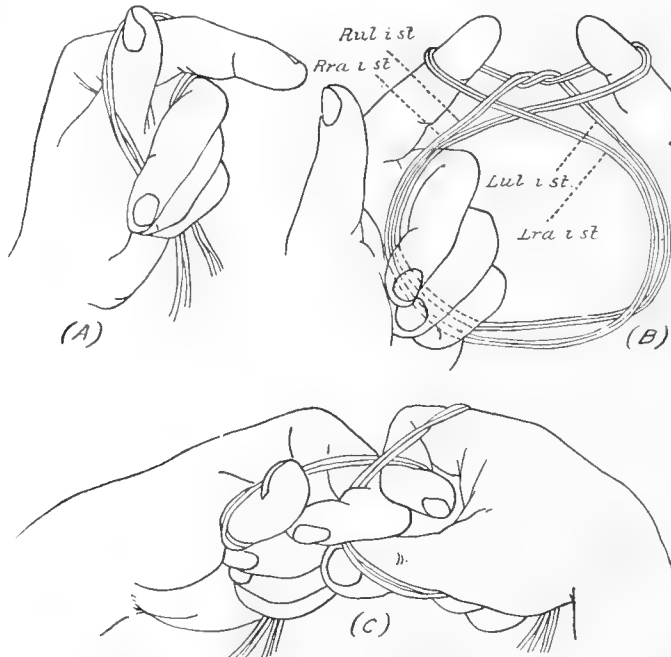


FIG. 309.—Ite palm. (Warrau.) (Preliminary stages)

once upon itself, replace it on the palmar string, and reinsert *t*. Treat *ul* loop similarly.

694. *The ite (mauritia) palm.* War. (figs. 309, 310).

Double the string and place it over *t* and *i* of each hand, position 3, opening A, holding it firmly in the palms with the *m*, *r*, and *l*. The *t* and *i* are kept wide apart (fig. 309 A).

Hook each *i* from proximal side into the loop on the opposite hand, draw these fingers apart, at the same time rotating them inward (i. e., toward you) and upward, and slipping out the thumbs (B).

It will be noticed that the *ra* and *ul i* strings of each hand cross one another in two places. The next two manipulations take place proximal to this crossing. On the left hand insert the *Lt* between the *R ra* and *ul i* strings and with back of top of thumb hook up toward you the *R ra* one. On the right hand pass the *R t* distal to the *L ul i* string, and insert it from the *ul* side, between the *L ra* and *ul i* strings (C).

Now hook up, with front of *t*, the *L ra i* string, and return the thumb, with the string, to its original position (fig. 310 D).

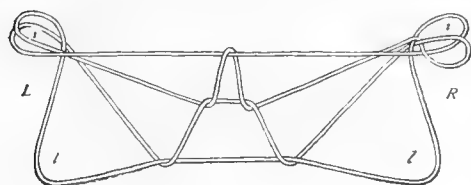


FIG. 311.—Mosquito. (Warrau.)

695. Mosquito. War. (fig. 311).

Use a comparatively short string.

BH.—String in position 4.

LH.—Pass *t* over distal side of proximal radial loop and hook up with back of its tip the distal *ul i* string.

RH.—Pass *t* over distal side of proximal radial *i* string and hook up with back of its tip the proximal *ul i* string.

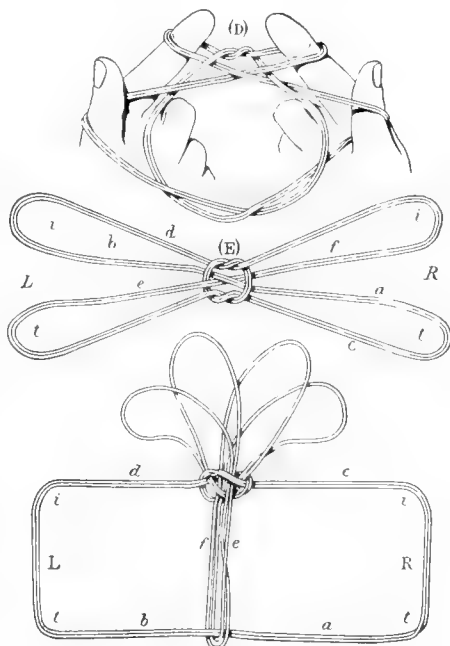


FIG. 310.—Ite palm. (Final stages.)

Draw the hands apart and slip the loops off *Lt* and *Ri* (E).

On *RH* insert the *i* into the *t* loop. On *LH* insert the *t* into the *i* loop, and manipulate until the completed figure is obtained.

LH.—Pass *l* proximal to proximal *i* loop and hook down into palm the distal radial *i* string.

RH.—Pass *l* proximal to proximal radial *i* string and hook down into palm the distal radial *i* string.

BH.—Slip loop off *t*.

LH.—With back of *t* hook up toward you the proximal radial *i* string and distal *ul i* string as they emerge beyond the string held down by *l*.

RH.—With back of *t* hook up toward you the *ra* and *ul* proximal *i* strings as they emerge beyond the string held down by *l*.

BH.—Slip off the string hooked down by *l*.

BH.—Each *t* is now in a triangle.

LH.—Pass *l* distal to proximal *ul i* string and with back of its tip hook up the string forming the side of the triangle facing the *t*.

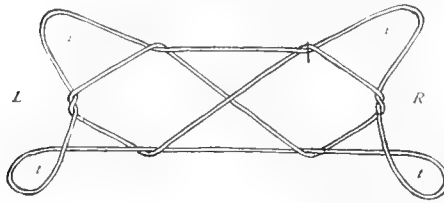


FIG. 312.—Bird footprints. (Warrau.)

RH.—Pass *l* distal to distal *ul i* string and with back of its tip hook up the string forming the side of the triangle facing the *t*.

BH.—Slip off loop from *t* and rotate the hands down away from you and up again, so that the dorsums face you, at the same time stretching *i* and *t* apart to their greatest extent.

696. *Bird footprints.* War. (fig. 312).

BH.—Position 4.

LH.—Take distal loop and place it on *l* direct.

RH.—Similarly.

The rest of the process is identical with preceding figure.

697. *Bird footprints,* War. (fig. 313); *little fishes,* Pat.

BH.—Position 4.

LH.—Take distal loop off *i* and, passing it under (proximal to) proximal loop, replace on *l*.

RH.—Similarly.

BH.—With top of *t*, reaching above (distal to) the intervening strings, hook up *ra l* string onto *ra* side of *t*.

BH.—Place *i* loop over *i* and *t*. Slip thumbs inside their own loops downward toward you and up again, so as to shift the *ra t* string constituents into *ul t* string ones. There is now a triangle in front of each *t*.

BH.—Placing *i* through this triangle, press it into palm and keep there while *l* is freed of its loop. Now rotate the hands down, away

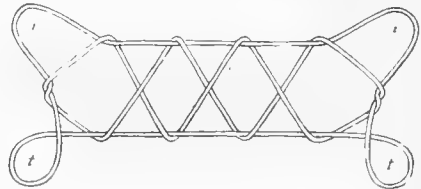


FIG. 313.—Bird footprints. Little fish. (Patamona, etc.)

from you, and up again, so that their backs face you, at the same time stretching *i* and *t* apart as much as possible.

698. *Rainbow*, War., Wap.; *mountain*, Pat. (FEL), Mak. (fig. 314).

BH.—Position 4.

BH.—Passing *t* distal to *ra* string of proximal loop on *i*, hook the *ul* string of proximal loop over *ra* side of *t*.

BH.—Pass *t* distal to *ra* string of distal loop on *i*, and hook ulnar string of distal loop over *ra* side of *t*.

BH.—Pass *l* distal to *ra* string of distal loop on *i*, and hook *ra* string of proximal loop onto *ul* side of *l*.

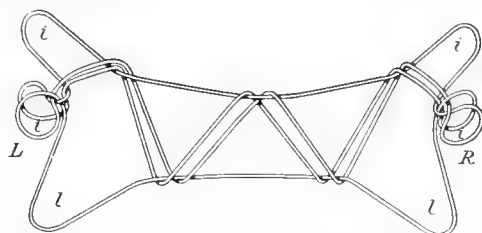


FIG. 314.—Rainbow Mountain. (Makusi, etc.)

BH.—Hook up from its ulnar side with *i* the string facing *l*, at the same time slipping *t* out of its loops, and rotating the wrist so that the backs of the hands face the operator.

699. “Four-eye” fish (*Tetrophthalmos*), War., Aka. (fig. 315); *armadillo* (KG, I, 123; II, 131).

BH.—Position 4, opening A.

LH.—Pull loop from back out between fork of *i* and *m* in front, draw out and place it on *RH* in position 1; i. e., on *t* and *l*.

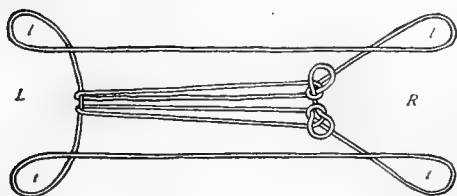


FIG. 315.—Four-eye fish. Armadillo. (Warrau, etc.)

RH has now two loops on it. Catch up with *LH* the *R ul t* string on *Lt*, and the *R ra l* string on *Rl* (A). Stretch hands sharply.

700. *Sunfish* or *lukunanni*. War. (fig. 316).

BH.—Position 4, opening A.

LH.—With *Ri* pull the string through fork of *i* and *m*, and place on *RH* in position 1.

RH.—Close. Raise loop from back of *i* and *m*, and place on *LH* in position 1: i. e., on *t* and *l*. Open *RH*.

LH.—Press *i* and *m* through their respective loops over the palmar string into palm, and let remaining loops on *t* and *l* slip off. Well stretch now the loops remaining on *i* and *m*, so as to get the central diamond figure more toward the *RH*, and then drop everything off *LH*.

RII.—Close. Raise loop from back of *i* and *m*, draw out, and place on *LII* in position 1. Open *RII*.

LII.—Hook *i* and *m* through their respective loops and press them into palm proximal to palmar string. Release loops on *t* and *l*, and straighten *i* and *m*.

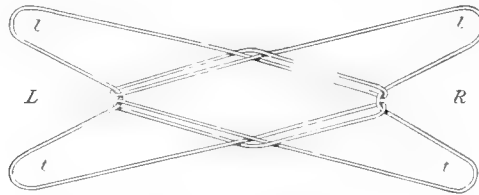


FIG. 316.—Sunfish. Lukunanni. (Warrau.)

LII.—Remove *i* and *m* loops and replace them on *t* and *l*, respectively.

701. *Sting ray.* War. (figs. 317, 318).

BH.—Position 4, opening B.

BH.—Exchange loops on the back of *i* and *m*, and stretch hands apart (fig. 317 A).

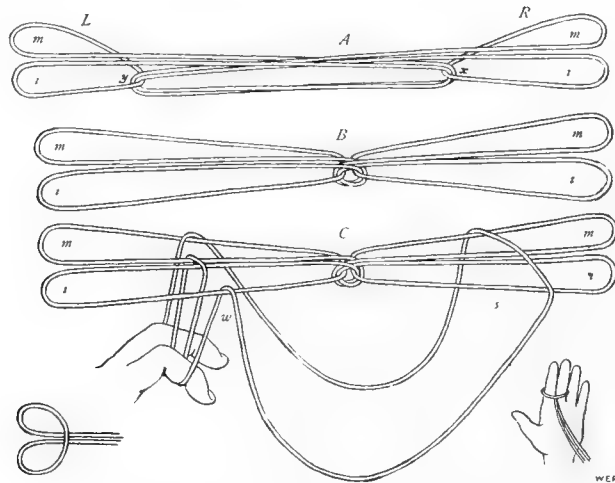


FIG. 317.—Sting ray. (Warrau.) (Preliminary stages.)

Get assistant to approximate the extremities of the lower loop by means of his forefingers inserted at *x* and *y*, when (B) will result.

Get assistant to throw a second string (*C w s*) over each end of the figure, and, with *i* and *m* of both his hands to hook down this second string through your own *m* and *i* loops, and to pull it toward him as far as it will admit.

Now drop the original string from off your own hands, and pick up, with your own *i*, the loops on your assistant's *i*. And then the two of

you will pull in this direction and in that until the necessary shape of a sting ray is obtained (fig. 318).

702. Spider. Wap., Mak., Pat. (fig. 319). A similar figure on Aiary River (KG, I, 123).

BH.—Position 4, opening B.

Made in the same manner as the sting ray of the Warrau, save that when the stage represented in figure 317 B is reached (fig. 319 A) the loops on *m* and *i* in both hands are taken off, twisted on their own axes toward the ulnar and radial side, respectively, and replaced (B).

703. Flying parrot, Pat. (FEL) (fig. 320); *monkey anus*, Mak.

LH.—Position 4, opening B.

Draw out this loop, screw it around half a circle, and replace on same fingers so as to form two crossed loops (A). Pass *R t* and *i* from distal side under these crossed loops, seize *ul i* string, and place it over *t*. Similarly seize *ra m* string and place it over *l*. Draw the long loop at back of *i* and *m* over fingers into palm, and tighten up. By alternately closing and separating *t* and *l* finger and pulling on the long loop, the parrot will move its wings (the *t* and *l* loops) and fly or the monkey contract and dilate its vent.

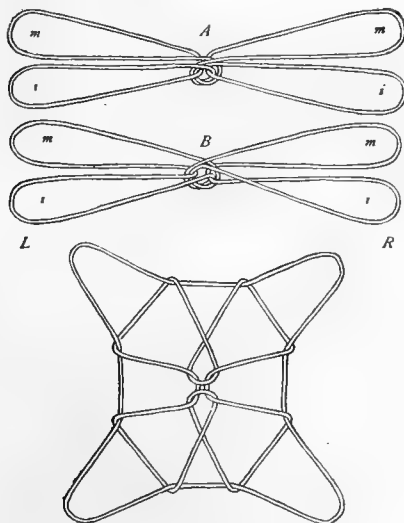


FIG. 319.—Spider. (Wapishana, etc.)

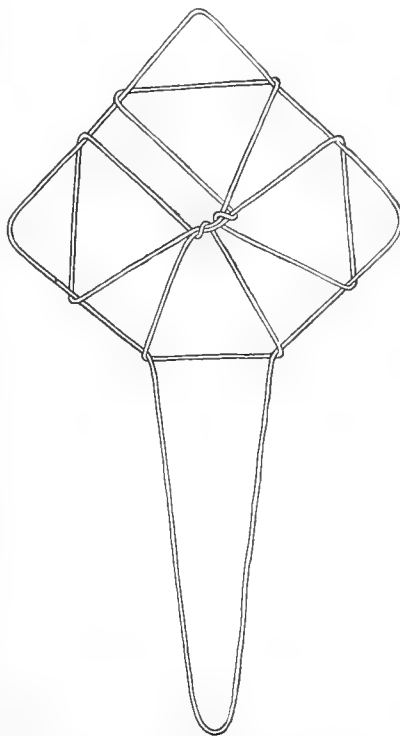


FIG. 318.—Sting ray.

704. Space has to be made here for certain miscellaneous string figures which must be regarded rather in the light of tricks and puzzles than as ordinary "cat's cradles." Indeed, the very last to bring this chapter to conclusion is a wooden one and only introduced as a matter of convenience.

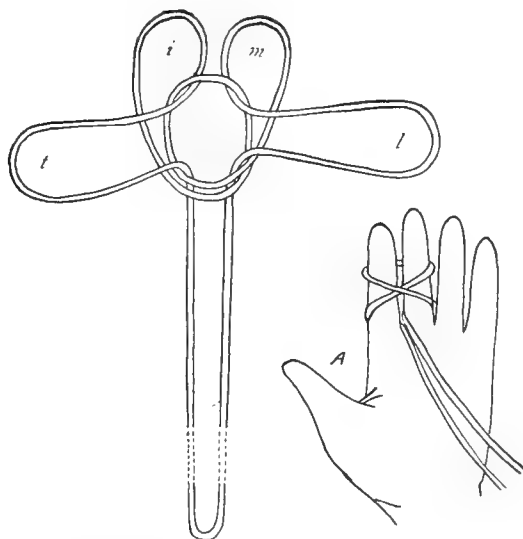


FIG. 320.—Flying parrot. Monkey anus. (Makusi.)

The baby sling. War. (fig. 321).

The progressive stages in the manufacture of this figure are represented in the accompanying illustrations.

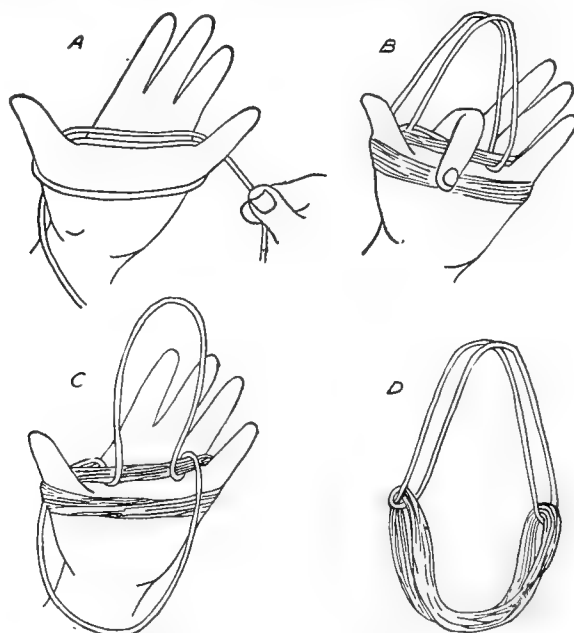


FIG. 321.—Baby sling. (Warrau.)

705. "*Patois*" fish. War. (fig. 322).

Make a double loop of the string, and fix it around both toes, holding the end of it in the mouth.

There is thus a double-string triangle with apex in mouth (*A*).

Loosen one of the double strings off the toes and let it fall to the ground behind the base string, so as to form a central dependent loop (*B*).

Pass this loop over the front of the triangle base, bring it up again behind, and to the front between its own two sides (*C*).

Spread out the ends of this loop in front of the triangle so that its corners project beyond the sides of the original triangle (*D*).

Bend these "corners" over, under, and out again, of the same two original sides (*E*).

Hold onto these corners, and let go the loop in the mouth.

706. *The woodpecker.* Mak., Wap., Pat. (fig. 323).

Use a comparatively long string, and rolling it round the left ankle, hold the remainder with *BH* in position 1 (*A*).

LH.—With back of *Ri* take up from proximal side the *L* palmar string.

RH.—With back of *Li* take up from proximal side the *R* palmar string, keeping *Li* within the *Ri* loop all the time. Through center of the diamond figure formed by the crossed loops passing over both indices pass the *L* foot. Through the same opening pass the *R* foot. Now, let go the loops from all the digits except the thumbs, when the string will be found around the *R* ankle (*B*). Pass the main loop of the string over the foot onto the back of the leg (*CD*). With the left hand pull to left the main string at the back of the leg, at the same time (*E*) with the right hand, pulling to right the main string on front of the leg (*F*).

Now, start again in similar fashion as at commencement, except that you pass the right foot through the center of the diamond and then the left, when on releasing the loops on the digits, except the thumbs, the string will be found back again around the left ankle.

From the fact of the string being thus made to "jump" from one leg to the other and back again it is known as the woodpecker, which thus hops from tree (a leg) to tree.

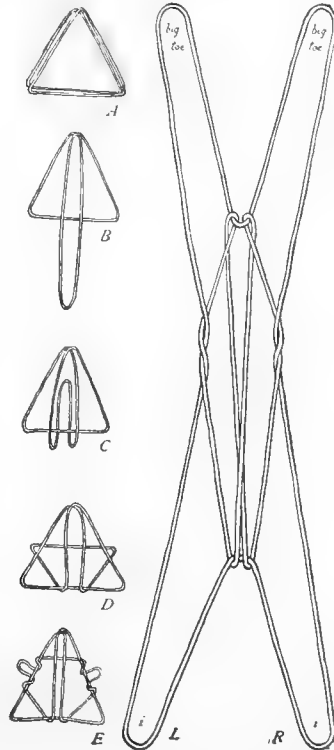


FIG. 322.—"Patois" fish. (War-rau.)

707. Fowl anus. Ara., War., Mak., Pat., Car. (fig. 324).

The stages of manufacture are shown in the accompanying illustrations. By holding onto the extremities of the string and working

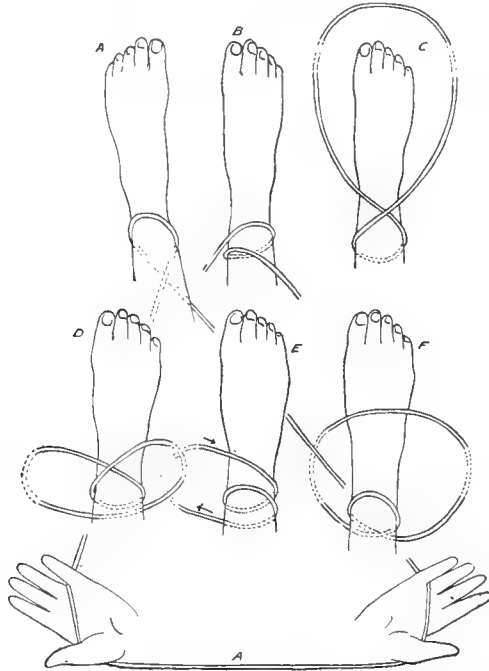


FIG. 323.—The woodpecker. (Makusi.)

the thumb out and in, the aperture (*a*) can be widened or narrowed as desired.

708. To cut the fingers.—First method: Arawak and most of the British Guiana tribes (fig. 325). Place the string on left hand,

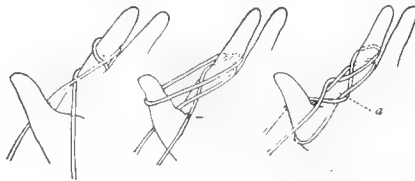


FIG. 324.—Fowl anus. (Arawak, etc.)

stage by stage, as represented in the above illustrations. Arriving at stage *F* release the thumb from its two loops, and, on pulling sharply at the ends of the string, the remaining digits will be freed.

709. To cut the fingers.—Second method: Arawak and most of the British Guiana tribes. Makusi call it *Worms crawling in the mud*

(fig. 326). Place the string over the left thumb (*A*). With *Ri* passed under (proximal to) *ra t* string hook up the *ul t* string, through the fork between *t* and *i*, and, after twisting clockwise the

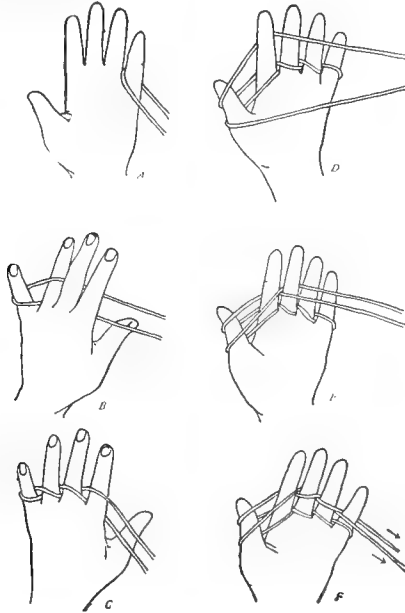


FIG. 325.—Cutting the fingers. First method. (Arawak, etc.)

loop so drawn out, hang it over the *i* (*B*). With *Ri* passed under (proximal to) *ra t* string, hook up the string on back of hand through fork between *i* and *m*, and treat it in the same way. Continue now until all remaining digits are looped (*C*). Slip thumb out of its

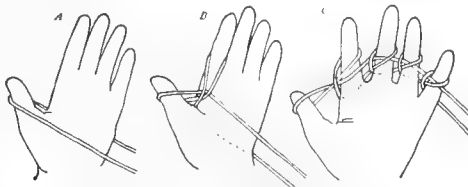


FIG. 326.—Cutting the fingers. Second method. (Arawak, etc.)

loop, and pull sharply on that extremity of string emerging from palmar surface of *l*, when all the digits will be freed.

710. To cut the fingers.—Third method (Wap.), perhaps introduced by Europeans (fig. 327): Use a comparatively short string. Place the loop over front of *LH* and bringing it back through the second and fourth interdigital spaces, hang it over the palm (*A*).

Pass it over dorsum of thumb, taking care that of the two strings composing it the one coming from the second interdigital space lies distal to the other (*B*). Next pass it with a twist over the little

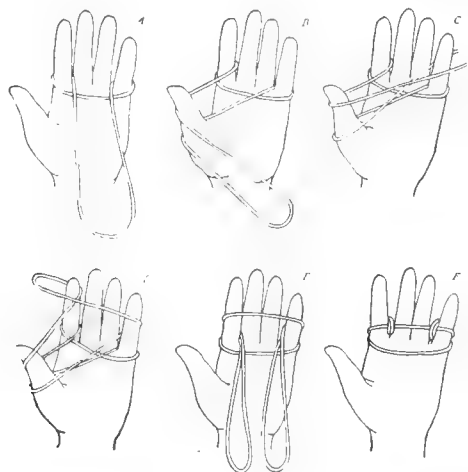


FIG. 327.—Cutting the fingers. Third method. (Wapishana.)

finger (*C*). Twist the loop once more and pass it over the index (*D*). Inserting the right index from below through the two loops

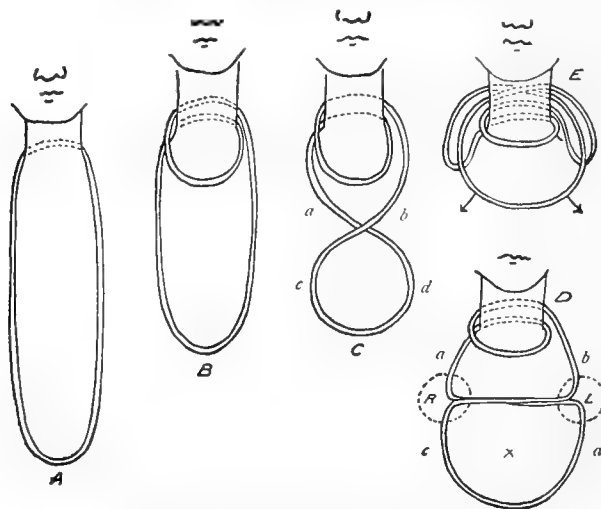


FIG. 328.—Hanging trick. (In most tribes.)

on the left thumb, remove these from the thumb (*E*) and pass them over the distal palmar string into the interdigital spaces whence they have emerged and drop them over the dorsum (*F*). Pull down the proximal palmar string, when the whole loop will be freed.

711. Hanging trick.—First method: In most of the British Guiana tribes (fig. 328). Hang string from neck (*A*). Make a loop in it around neck (*B*). Cross the left string over the right so as to form an upper and lower loop (*C*). By inserting the *R* and *L* *t* and *R* and *L* *i* into these two loops, respectively, the portions of string

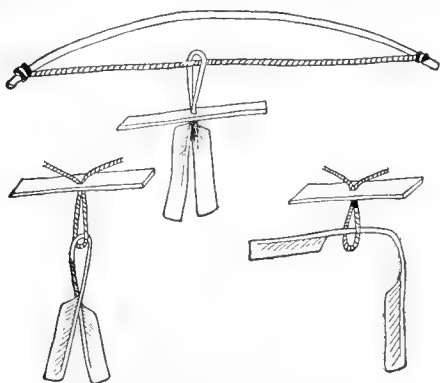


FIG. 329.—The bowstring puzzle.

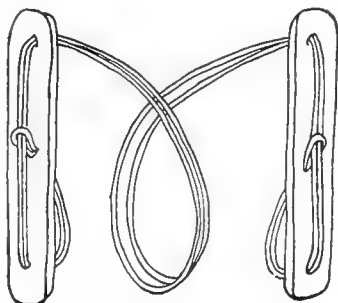


FIG. 330.—The stringed sticks puzzle.

where crossed are now approximated and fixed in position (*D*). The hands, still holding the approximated strings, are now raised so as to drop the lower loop over the head; as they do so they let go the strings constituting the upper loop, but pull on those constituting the

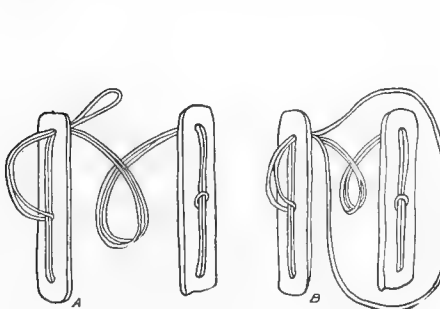


FIG. 331.—Solution of the stringed sticks puzzle.

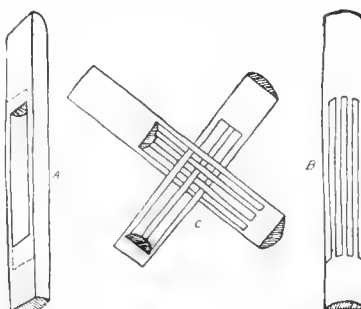


FIG. 332.—To open two locked sticks.

lower one (*E*), with the result that the whole string comes off the neck.

712. Hanging trick.—Second method (Mak., Pat.): After hanging the string and making a loop in it around the neck the distal end of the dependent loop is placed on the two hands, as in position 1, opening *A*. Now pass your head through the central space of the figure on your hands, drop the loops off both thumbs and little fingers, and upon extending with the indices your neck will be freed.

713. *To remove the figure from off the bowstring without untying the latter* (Ara., Pat., Mak., Wap.) (fig. 329).—The two pieces constituting the lower figure are usually cut out of some tough leaf palm. The solution is easily found by bending the bow and pulling the string through the aperture in the crosspiece.

714. *To remove the endless string that has been placed through three holes on each of two sticks* (figs. 330, 331).—The use of this puzzle has been recorded from the Carib (WER, VI, sec. 109). It is employed by Patamona and Makusi for similar purposes.

Solution: On either stick pull the end of the string out from the middle hole, then in through the top one, right over the whole of the other stick and intervening string and out again.

715. *To open two locked sticks* (fig. 332).—The Patamona and Wapishana may employ this in circumstances similar to the preceding. Taking a convenient length of soft leafstalk, preferably plantain or banana, it is split lengthwise and the flat surface of one half carefully excavated in the center (*A*). By diligently incising on the convex surface (*B*), picking away here, and paring off there, the strip can gradually be split into two, which interlock (*C*). The puzzle is to unlock them without breaking, a feat which, it is hardly necessary to say, is impossible.

CHAPTER XXV •

ANIMALS UNDER DOMESTICATION AND CAPTIVITY

Suckling, taming, etc., in general (716).

Dogs: Indigenous (717); hunting in packs, the "Warracabba tiger" (718); training, etc. (719, 720); domestic curs (721).

Monkeys (722).

Other four-footed mammals (723).

Birds (724).

Reptiles (725).

Bees and other insects (726).

716. Women will often suckle young mammals just as they would their own children; e. g., dog, monkey, opossum-rat, labba, acouri, deer, and few, indeed, are the vertebrate animals which the Indians have not succeeded in taming. It is the women who especially cultivate the art of bird taming, some of them holding quite a reputation in this respect. The period for the creature to be tamed is usually before it is feathered, but occasionally it would seem that the bird's age is immaterial. Bates gives a very interesting example of what can be done in this way, from the Tapajos, lower Amazon, in connection with a Maracanã parrot (*Conurus guianensis*), which had dropped from a flock that seemed to have been fighting in the air. I wished, he says, to keep the bird alive and tame it, but all our efforts to reconcile it to captivity were vain. It refused food, bit everyone who went near it, and damaged its plumage in its exertions to free itself. My friends in Aveyros said that this kind of parrot never became domesticated. After trying nearly a week, I was recommended to lend the intractable creature to an old Indian woman living in the village, who was said to be a skillful bird tamer. In two days she brought it back almost as tame as the familiar love birds of our aviaries. I kept my little pet for upward of two years. It learned to talk pretty well . . . I do not know what arts the old woman used. Capt. Antonio said she fed it with her saliva (HWB, 230).

But it is not only young birds and animals that are tamed. Many are shot with special arrows poisoned with just sufficient ourali (urari) to bring the animal down without actually killing it. The animal is then picked up, its face is rubbed with faroah . . . and it is next put under an inverted pot or in some other dark and secluded

place, and is there left without food or care for a day or two. If it survives this treatment, it is taken out, and it is then generally docile and ready to eat the food given to it (Ti, June, '82, p. 39). The natives of the upper Amazons procure the coaitá (couata) when full grown by shooting it with the blowpipe and poisoned darts, and restoring life by putting a little salt (the antidote to the urari poison, with which the darts are tipped) in its mouth. The animals thus caught become tame forthwith (HWB, 127, 333).

717. *Dogs*.—Our own domestic dog, which is used by the Indians, of course originally reached these shores with the Spaniards, but there seems no doubt that indigenous ones existed on the arrival of the foreigners and are still to be met with, though it is doubtful if they were ever really domesticated; they may occasionally have been tamed. Such indigenous creatures must not be confounded with the so-called wild dog, the "chien sauvage," crabedago (FE, II, 120-121), crabbo-dago, crabbed dog (St, II, 41), or crab-dog (SR, II, 443). On the islands dogs were noticed by the first Spanish discoverers; e. g., at Santo Domingo the explorers saw some dogs of various colors, "as in our own country," says Chanca, but in shape and size like lap-dogs (DAC, 447). For the southern continent, Von Humboldt mentions that in the countries he and his companions had just passed through, between the Meta, the Arauca, and the Apure, there were found, at the time of the first expeditions to the Orinoco in 1535, those "mute" dogs called by the natives *maios* and *auries*. This fact is curious in many points of view. We can not doubt, he says, that the dog, whatever Father Gili may assert, is indigenous in South America. The different Indian languages furnish words to designate this animal which are scarcely derived from any European tongue. [The Pomeroon Arawak call a domestic dog *karíru*, i. e., big tooth, as well as *perro*, the Spanish term. The Makusi call it *arimaráka*.] To this day the word *auri*, mentioned 300 years ago by Alonzo de Herrera, is found in the Maypure. The dogs we saw at the Orinoco may perhaps have descended from those that the Spaniards carried to the coast of Caracas; but it is not less certain that there existed a race of dogs, before the conquest, in Peru, in New Granada, and in Guiana, resembling our shepherd's dogs. The *allico* of the natives of Peru, and in general all the dogs that we found in the wildest countries of South America, bark frequently (AVH, II, 509). Just previously Stedman had reported that in Surinam the dogs lose the faculty or at least the habit of barking; and it is a known fact that the native dogs never bark at all . . . if the American dogs do not bark, their howl is very loud (St, II, 80). The indigenous dogs referred to are probably the *Canis cancrivorus* and *Canis* [*Lycalopex*] [*Pseudalopex*] *azaræ*. The former is known

as maikang to the Makusi and as carasisi or savanna dog to the colonists; in external appearance it approaches in many ways the Guiana fox, *Canis azarae*, but differs, etc. . . . The Indians assured Schomburgk that they even hunt deer and the stragglers from the bush-hog troops. . . . The maikang has an especial value for the Indians in that it makes an excellent cross with their dogs, the cross being especially good hunters. . . . A tamed maikang is one of the most treasured possessions of an Indian, who will feed it on cooked flesh, fish, and fruit, especially ripe plantains. . . . One animal measured 2 feet 2 inches from tip of snout to root of tail, the tail 10 $\frac{3}{4}$ inches (SR, II, 196).

718. Mention of the habit of such wild dogs hunting in packs is not wanting. On the upper Berbice, while some of the Indians were hunting, they met a pack of wild dogs. "Our own dogs," says Schomburgk, "secured one, and as Indians are generally fond of crossing their breed, Acouritch (the Carib) tied it to a tree, to take it with him when he returned from the chase. . . . Hendrick . . . told me that the pack might have amounted to 30 or more. In figure he likened them to the bull terrier—the ears rounded and hanging, the color reddish brown" (ScA, 325). So, again, Wallace speaks of a wild dog or fox of the forests. It hunts in small packs. It is easily domesticated, but is very scarce (ARW, 316). Barrington Brown describes how, on the Cartoonie branch of the Puruni, he passed a red cliff and hill on one side of the river, where he was informed there was a colony of wild dogs. He was told that they were of small size, with drooping ears like a lap dog's, and of a brown color; that they lived in burrows in the ground and barked like dogs. But as he did not see them he could not speak positively as to their identity, but believed them to be the South American wild dog, *Canis azarae* (BB, 44). Bates makes record of the raposa, a kind of wild dog, with very long tapering muzzle and black and white speckled hair. . . . The one mentioned was taken from a burrow in the earth in the forests bordering the Teffé, near Ega, upper Amazon (HWB, 304). It seems to me quite possible that the mythical "Warracabba tiger" has taken its origin from these indigenous wild dogs hunting in packs.

719. The best hunting dogs, those apparently crossbred from the indigenous ones, have a long time spent upon their training and are fed regularly, each dog, as a rule, being only trained to hunt one particular kind of game. The superstitions relative to the training and education of dogs are recorded elsewhere (WER, VI, sec. 234). A high value is set upon good hunting dogs, which constitute an important item of trade and barter. Brett speaks of visiting an

Akawai settlement, Konosa, on the Isororo branch of the upper Pomeroon, and seeing a pack of dogs ranged on a long table, each tied to a bar of wood, the total number of dogs being six and twenty. On inquiry from the old housemaster he learned that the dogs were of a remarkably fine hunting breed, which he had purchased in a far distant region and was rearing and training for sale (BrA, 195). Schomburgk says that he never saw so many or such beautiful dogs as at Maripa, a Makusi village on the upper Takutu (SR, 11, 95), whither people come from far and wide to buy (SR, 11, 82). According to him, the finest among their number was, however, a dog from the Taruma nation, with which he was so much pleased that he induced the owner to part with it for a gun. Its name was Tewanau. The Woyawai and Taruma are considered the best trainers of dogs, and these animals constitute a kind of merchandise or article of barter between them and their neighbors. This dog was of an uncommonly large size [between a greyhound and pointer, with details given]. He had only to regret that it was emasculated, a custom which the Taruma follow under the supposition that they grow fat under it (ScT, 65). For further information concerning the dog trade the reader is referred to section 827.

720. Besides being regularly and carefully fed, these hunting dogs may be supplied with special benches, fixed at varying heights from the ground, to keep them, so it is said, out of the way of chigoes and other ground vermin. Thus, in a house up on top of a hill behind Wakrapo (a Makusi village at the back of Toka on upper Rupununi), I saw just within the entrance a raised bench about 2 feet high and 4 feet long. It was made of four uprights, supporting two laths, upon which four crosspieces were tied. On top was placed a sheet of bark, and here was resting a beautiful, well-fed, and well-cared-for dog that had been especially trained for hunting deer. Elsewhere these benches may be seen to be fixed between 4 and 5 feet from the ground.

721. While, as already mentioned, hunting dogs are fed regularly, the useless curs live as best they can on scraps, bones, vegetables, and air. St. Clair was, I believe, the first observer to point out the adaptability of so naturally carnivorous an animal to the almost entirely vegetable diet with which it is usually supplied (StC, 1, 315). Some of the curs follow the women to the cassava fields . . . and are looked upon as a protection from wild animals; for should a jaguar pounce down upon the party, he will be quite satisfied with seizing and carrying off a dog, giving the women time to escape (BB, 53). If a dog acquires the habit of stooling in too close proximity to a house, the Pomeroon Arawak will take the sen-sen, a species of bee, and make it sting the animal just beneath its tail.

This is believed to teach the dog better manners and cause it to perform its emunctory functions farther afield.

722. Monkeys.—There are a great variety of the monkey tribe in Guiana, of which the couata is the most intelligent, and may be taught to fetch water from the riverside in a calabash. At least, Missionary Bernau says so (BE, 9). Several of the smaller kinds—e. g., the sakawinki (*Chrysothrix*)—form part of the domestic animals of the Indians, and are seen clinging to their shoulders when at home and traveling. The “howlers” (*Myctes*) are often caught, but do not survive captivity many weeks (HWB, 151). Schomburgk furnishes us with the following description of the Arekuna method of taming a stubborn old monkey shot by an arrow tipped with weak poison so as only to stupefy it. As the animal falls from the tree the Indians immediately suck the wound and bury him up to the neck in the ground, and douche him with a solution of certain niter-contained earth, or, in the absence of it, with sugar-cane juice. As consciousness returns he is taken out of the grave and tied up with palm leaves just like a little baby in its swaddling band. Every movement is now impossible. He is left in this strait-jacket for some days. Cane juice is his drink, and cooked saltpeter water, strongly seasoned with capsicums, is his nourishment. If this does not succeed, the creature is hung for a while in the smoke at every outburst of anger. His untamed temper soon disappears, and his wild eyes become soft and pine for freedom. The bands are loosened, the remembrance of the past is fled with all its customs, and the wildest and most savage monkey becomes as tame as if he had never roamed the forest (SR, II, 248).

723. Other four-footed animals.—Domesticated pets may be made of the labba and acouri, the otter (SR, II, 36), the porcupine, *Cercolabes prehensilis* (SR, II, 499), the glutton or hakka, *Gulo barbarus* (SR, II, 99), and the sloth (KG, II, 148). Throughout my journey in the Patamona country I came across several tame kibihi (*Nasua*). They were often to be seen carried along clutching onto their mistress's head or shoulders. Bush hogs are also to be seen domesticated, but occasionally they may turn out to be very dangerous pets. On the other hand, according to the Arekuna, the *Cavia leucopygia* or white-rumped cavy (SR, II, 249) can never be tamed.

724. Birds.—On the Uaupes River (upper Rio Negro) the Indians use the under tail coverts of the great harpy eagle as head ornaments. . . . These are large, snowy white, loose, and downy, and are almost equal in beauty to a plume of white ostrich feathers. The Indians keep these noble birds in great open houses or cages, feeding them with fowls, of which they will consume two a day, solely for the sake of these feathers; but as the birds are rare and the young with difficulty secured, the ornament is one that few possess (ARW, 203).

Though fowls were introduced by the Spaniards, Stedman was of opinion that a smaller species of the dunghill kind, with rumped inverted feathers, seems natural to Guiana, being reared in the inland parts of the country by the Indians (St, I, 123). The statement that certain Indians will eat neither poultry nor hen eggs is true within limits. Fowls are foreign to the country and for that reason may be taboo, while a native will never eat the bird or animal that he has himself tamed any more than the ordinary European will think of making a meal of his pet canary or tame rabbit. The Akawai on the Cuya River kept fowls but ate neither their flesh nor eggs, because of their picking up all kinds of offal. Their object in keeping them was to collect the long neck and tail feathers for head ornaments (App, II, 183). Ducks were found in the houses of the island of Turuquiera [Guadeloupe] at the time of the conquest (DAC, 448). Schomburgk speaks of Vicissi duck (*Dendrocygna viduata*) as being frequently reared by the Indians, who sold them to the colonists (ScT, 32). But the varieties of bird that can be domesticated and tamed are almost endless; e. g., cock-of-the-rock (*Rupicola*), sun bird (*Eurypyga helias*), maam (*Tinamus*), marudi (*Penelope*), powis (*Craza*), trumpeter (*Psophia*), hanaqua (*Ortolis*), parrots, macaws, ducklars (*Plotus*), troupials, toucans, and various owls. I have even seen a tame carrion crow (*Catharista*) on the Rupununi, and have known of humming birds being tamed among the Arawak of the Iteribisee Creek, Essequibo River. As might be expected, some of these birds will do better than others in their new environment; e. g., the Makusi told me that the cock-of-the-rock does not thrive well in captivity. I once saw a tame young savanna duck at Annai on the Rupununi River, but was informed that as soon as it was fully fledged and matured it would fly away and return no more; that it never remains even in "open" captivity. The artificial coloration of birds' feathers has been discussed already (sec. 84).

725. Reptiles.—A "snake charmer" is figured on the frontispiece of Brett's work on "The Indian Tribes of Guiana," but apparently introduced for purposes of embellishment and advertisement. Frogs and toads were kept for purposes of augury, etc. (WER, VI, sec. 349). Turtles were, and are still, preserved alive in palisades, pens, etc., until such time as they may be required for food.

726. Bees, etc.—Note has been made of a beehive in a maloka—i. e., common living house—on the Apaporis River (KG, II, 291), a branch of the Yapura, a tributary stream of the upper Amazon. A strange kind of wood-cricket is found in the neighborhood of Obydos, lower Amazon. The males produce a very loud and not unmusical noise by rubbing together the overlapping edges of their wing cases. The natives call it Tananá in allusion to its music. . . They keep it in a wickerwork cage for the sake of hearing it sing (HWB, 128).

CHAPTER XXVI

RULES OF CONDUCT: CRIME AND PUNISHMENT

Redress for injury, either an individual (727) or family matter, e. g., homicide (728).

Infanticide: Twins (729); females (730); first-born, etc. (731).

Suicide (732).

Adultery (733).

Secret poisoning: Animal poisons (734); vegetable poisons (735).

Theft (736); property marks (737).

Minor punishments: Whipping (738); ant biting (739).

727. The dispensation of justice for the individual does not usually appear to have been a concern of the community as a whole, or of the chieftain as its representative. It was the business of the person injured or his relatives to get what redress they could or considered necessary. In minor matters, e. g., theft, a chief might call together the elder men in the common meeting house, where the litigants would abide by the decision arrived at. There was apparently no such thing as public punishment, except perhaps in the case of adultery among the Orinoco Carib, where the whole village populace dealt with the guilty parties. Certainly of the island Carib it is said they know not what it is to punish publicly, or to observe any form in the execution of justice; nay, they have no word in their language to signify justice or judgment (RO, 523). Rochefort has stated very clearly that the administration of justice among these same people was not exercised by the captain, nor by any magistrate; but . . . he who thinks himself injured gets such satisfaction of his adversary as he thinks fit, according as his passion dictates to him or his strength permits him. The public does not concern itself at all in the punishment of criminals; and if anyone among them suffers an injury or affront without endeavoring to revenge himself, he is slighted by all the rest and accounted a coward, and a person of no esteem. But, as we said before, there happens few quarrels or fallings out among them (RO, 522).

728. He that kills anyone who is not of his nation's declared enemies . . . immediately hides, and subsequently takes to flight (G, I, 132). With the Carib Islanders a brother revenges his brother and sister, a husband his wife, a father his children; so that when anyone is killed they think it justly done, because it is done upon the account of revenge and retaliation. To prevent that, if a savage of

one island hath killed another savage out of a fear of being killed by way of revenge by the relations of the deceased, he gets into another island and settles himself there (RO, 522-523). So also on the mainland the *lex talionis* is observed rigidly (ARW, 347), a custom which, according to Hilhouse, tends greatly to prevent the increase of population (HiC, 230). The young Arawak who had shot his wife after a "paiwarri" on the Arapaiaco was soon taken and brought back to the fatal spot. There two of them held him by the outstretched hands, and he submitted to his fate from his own brother, Kaikaibo, who took up a billet of wood and killed him by a blow upon the temples (Br, 104). At a paiwarri feast [at Tapacooma] an Arawak had been killed in a moment of irritation, and the murderer, a piai, or sorcerer, was sentenced by the tribe to be shot, after digging his own grave, by the nearest relative of the murdered man (A, 1, 133). It would be misleading, however, to regard tragic occurrences such as these, or even minor quarrels of any description, as arising directly and solely from intemperance, as stated by Bancroft (BA, 318) or by Brett, who remarks that the Indians lead a simple life, without quarrels, except such as arise from that fruitful source of evil, intoxication (Br, 102). As a matter of fact, though the Indian may lead a life of apparent amity, an injury is neither forgotten nor forgiven, but only bottled up, so to speak, to be subsequently sampled at the next drinking party, where his tongue is unbridled, his mind inflamed, and his actions are more or less irresponsible. So well is this known and recognized that at every drunken orgie one of the first concerns of the women is to hide all the paddles, cutlasses, and other weapons with which the men might damage one another.

729. Infanticide would appear to have been more or less permissible under one or other of at least three circumstances, whether the child were one of twins, a cripple, etc., or a female. On the Orinoco twins were regarded as dishonorable. Indeed, as soon as word went round that so-and-so had been delivered of a double birth, the other women, without considering that they might fall into a similar predicament, as was occasionally the case, would rush up to the patient's quarters and crack their jokes, that she must be like a rat which gives birth to four at a time, etc. But the mischief did not end here, for the Saliva Indian, as soon as one child was born, and she felt another remaining, would immediately bury it so as to avoid the chaffing and the joking of her neighbors as well as the displeasure of her husband. For he, on his part, deeming that only one of these twins could possibly be his own, was fully convinced that the other must be proof of his wife's disloyalty. An instance is recorded of a "captain" publicly chastising his wife on this ac-

count and threatening the other women with dire punishment if they dared go and do likewise (G, I, 189-190). At the present day among the Kobeua (Betoya stock) of the Uaupes River it is the second twin that is immediately killed after birth, and then and there buried; but if the infants are of different sexes it is the female that is sacrificed (KG, II, 146). Schomburgk admits that he could not learn anything of the practice of destroying one out of every birth of twins, as had been mentioned by Humboldt (ScF, 219) and as to the Makusi and Waika he distinctly denies the existence of such a practice (SR, II, 313). The infanticide of a twin or abnormal child was likewise practiced by their kinsfolk, the Surinam Carib. In the former case it was a sign of her adultery, in the latter it pointed to its being the offspring of the Snake Spirit (PEN, I, 158). Van Berkel mentions the custom on the Essequibo, in the case, apparently, of an Arawaktwin (BER, 57). Barrère, in writing on the Cayenne Indians, says that as soon as a child is born its fate is decided; if anything is wrong with it it is killed and buried without pity; hence, no dwarfs, hunchbacks, lame, and crippled are to be seen (PBA, 227). So also, on the Orinoco, Gumilla has recorded that if an infant is born with any defect or monstrosity, minus a hand or foot, or with a harelip, as commonly happens, the child, boy or girl, is put to death without any objections being raised (G, II, 61). On the other hand, there is no less an authority than Schomburgk for the statement that the practice was not so general among the savages of Guiana as had been supposed (ScF, 219). All the same it is very uncommon to see an Indian either lame or deformed (BA, 331).

730. As one of the principal causes of the depopulation of the Orinoco lands, Gumilla mentioned the practice of destroying the girls soon after they were born. "I do not mean," he says, "that the crime of infanticide is common among all the savage women, for there are many who bring up their little girls with as much affection as their boys, but yet such women are not sufficiently numerous to influence the many who practice it, with the result that infanticide still proves no inconsiderable factor in the diminution of a tribe. Those women who practice it, defend it on the score of love and affection. They recognize the hardship of their own lot, as compared with the opposite sex, and maintain that they only treat their little babies as they wish their own mothers had treated them. The practice is not universal amongst all these Orinoco nations, but though it dominates in them, there are many exceptions, especially where the husbands treat their wives decently. When committed, it is effected immediately after birth, by breaking the baby's neck, by forcibly pressing on its breastbone, or by cutting the string too near the navel, so as to prevent its being tied and so bleeding to death, or without hurting it at all, as some say, by burying it alive" (G, II, 60-63).

731. Judging from the following passage relative to the Nouragues of Cayenne it would almost seem that a sort of death by exposure must at times have been practiced on the infantile population, but unfortunately no particulars are forthcoming as to the circumstances upon which it was dependent. "I had before baptized," says Father Grillet, "a little girl in the cottage of this Imanan immediately after it was born, because the mother of it when she had brought it into the world had left it in the dirt [it is the custom of this nation to use their children after this manner], from whence they would not take it up for a long time. Being told of this disorder, and finding they would put nothing under the infant to keep it from the coldness of the mud and of the night, I baptized it" (GB, 19). It has been said of the Ximánas and Cauxanas [Arawak stock], between the Issa [Putumayo] and Japura Rivers, that they kill all their first-born children (ARW, 355).

732. Indians are said often to allow themselves to give way to despair. Sometimes they do not wish to survive an insult that they have received, and it is only too common for certain nations to strangle themselves for nothing sometimes. Barrère reports seeing a young Indian woman who, because she had had some words with her sister, whose part her mother took, undid her hammock ropes with which to hang herself in the forest and was only prevented doing so by a missionary who ran after her (PBA, 128). Examples of both males and females committing suicide are also recorded by Pinckard (Pnk, 1, 502-503) and by Brett (Br, 352). An attempt at hanging is given by the latter in the case of a woman. Among the cases of which I have obtained first-hand information on the Pomeroon the means adopted was by drinking "bitter" cassava water. The causes were unrequited affection, jealousy, or other "affairs of the heart," and the victims women. On the islands the Indians at the time of the conquest, to avoid being persecuted with fire and sword by the Spaniards, were said to have committed suicide on a wholesale scale by means of cassava juice (RO, 106).

733. What Schomburgk has stated of the Makusi can be repeated with equal truth of all other Guiana Indians. Every girl, without in the slightest degree damaging her reputation, can enjoy the favors of many lovers, but as soon as she is married the most inviolable observance of her honor is demanded (SR, 11, 313). So also Bancroft. Though chastity after marriage is required, it is far from being deemed necessary even in the females before that ceremony (BA, 320). On the Moruca, at the back of many an Arawak house, I have seen the carefully weeded assignation spot hidden by foliage, where the girls meet their lovers. Though more or less concealed from the main pathway these places seem to be known and tolerated by their

parents. Speaking in general, the Indian girl, after her first menstruation, will take up with some young fellow for a month or so, then make a change and live for some years, perhaps, a life of pleasure. Finally, she will meet her life companion and become a true and hard-working wife. As a rule she will not bear a child during her years of freedom; if she does, she will probably settle down. As Norden-skiöld has pointed out elsewhere in South America, these Indians, in spite of the absolutely free life in which they have spent their youth, are strong and healthy people; their girls, all of whom have flown from flower to flower, bear fine, upstanding children when once they start their own household. It is only from the sexual diseases and other vices introduced by the European that the race is deteriorating. Free love is quite the ordinary thing among these people, and that there should be anything wrong in this so-called immoral life is absolutely unintelligible to them. We need not believe that girls who change their lovers every, or every other, night are in any way worse than if they had been left untouched. They are good and industrious and will become excellent housewives and good mothers. The life they lead is quite as natural to them as it is to their parents and other relatives (NOR, 88). It was said of the island Carib that there are mothers who turn their children into prostitutes when they begin to mature and are not taken to wife (PBR, 251). At the present day, on the upper Rio Negro, the Maku Indian girl slaves act as free women for the young men (KG, I, 269). Once married, however, the Indian expects fidelity to his bed, and the older records would show that he seldom hesitated to take drastic steps to enforce and punish it. What ordinarily took place in the islands is well portrayed in the following account left us by Rochefort: "Nor are the Caribbeans the most indulgent and the least jealous of their honor in this case [of breach of conjugal love]. Heretofore they knew not how to punish this crime, because it reigned not among them before their commerce with the Christians; but now if the husband surprises his wife prostituting herself to some other or have otherwise any certain knowledge of it, he does himself justice, and seldom pardons her, but dispatches her, sometimes with his club, sometimes by ripping up her belly from above downward with a razor or the tooth of an agouti, which is nearly as sharp. This execution being done, the husband goes to his father-in-law and tells him in cold blood, 'I have killed thy daughter, because she proved unfaithful to me.' The father thinks the action so just that he is so far from being angry with him, that he commends him, and conceives himself obliged. 'Thou hast done well,' replies he; 'she deserved no less.' And if he hath any more daughters to dispose of he immediately proffers him one of them, and promises to bestow her

on him at the first opportunity" (RO, 548-549). So in Cayenne, Barrère reports how husbands would kill their wives for adultery without mercy, even on suspicion alone (PBA, 222). The offense was treated with similar severity in Surinam. Thus on the slightest appearance or the least suspicion of infidelity, the husbands have the right either to send their wives back or to kill them, without more formality and without any fear of being expostulated with or punished (FE, 80). "On the Orinoco," says Gumilla, "all recognize adultery, notably when women commit it, but the Carib is the only nation which has a punishment fixed for adulterers, who are put to death by the whole village populace in the public place. In other nations the injured husband swallows his grievance and troubles no more about it, cohabiting as many times with the wife of the adulterer as the latter had committed the offence with his own" (G, I, 132). According to Bancroft, to violate the chastity of a wife among the Akawai is almost the only injury that draws down the fatal vengeance of alleged secret poison (BA, 268). Finally, speaking apparently of Indians generally, Hilhouse has stated that most of the blood feuds originate in jealousy and the revenge of connubial injuries, of which they are highly resentful (HiC, 230). On the other hand, there is Crévaux's opinion of the Guahibo of the Vichada River, on the extreme west of the Guianas, that they possess very lax morals, and sell their wives or daughters to travelers, though the same author very pertinently makes the inquiry as to whether such a practice existed among them before the advent of the whites (Cr, 547). In this connection it is interesting to refer to Alonzo de Ojeda's account of the condition of affairs prevailing still more to the westward at the time of the conquest in 1499: "Neither did the men [at Maracaibo] display in the least degree that jealousy which prevailed in the other part [east side] of the coast, but, on the contrary, permitted the most frank and intimate intercourse with their wives and daughters" (WI, 618).

734. Mention of the alleged poisoning of food and drink in cases of secret enmity or punishment—e. g., for women who viewed the Jurupari trumpets—is common throughout the literature from Gumilla down to such late times as that of Crévaux. So far, however, as evidence is forthcoming, the charge of such a widespread practice among the Indians is, in my opinion, not proven. Nevertheless, here are the alleged facts from which the reader will be able to draw his own conclusions. "For mixing with their food or drink the Indians of the Orinoco," says Gumilla, "use ant poison . . . Certain large kinds of gaudy colored ants are carefully picked up one by one with a pad of cotton and held over the edge of a clay pot, where they are cut in two, the tail ends dropping into the water, which is then put on to boil. A fatty scum forms on the

surface. This is collected and kept, not in reeds or canes, but in the hollow long bones of 'tiger,' monkey, or 'lion.' When giving a drinking party and while handing the calabash to his victim, the murderer, having previously placed some of this fatty scum under his thumb-nail (sec. 279), dexterously dips the digit into the drink. Eaten or drunk in small quantity it infallibly kills the person, reducing the body before death to a living skeleton, with slow and continuous fever and marked brightness of the eyes" (G, II, 138-140). The Surinam Carib are likewise said to have known how to prepare a potent poison by letting boil a large number of poison ants for a long while in a pot of water. When the water was now cooled, a poisonous fatty layer was found on top of it. Furthermore, some old Indian women are said to know a poison that is so powerful that anyone who drinks of it succumbs within a few seconds with the most terrible pains. Another poison of less strength is used by female rivals to make away with one another. Or they sometimes offer the poison to their faithless lover. They hold it then between the finger and nail while they offer the calabash with the hand. This poison is said to be a white powder, just like the so-called *Wisí* (sec. 735) of the Negroes. The *donké* ("don't care") poison, so well known in Surinam, is said to be indigenous among the Indians (PEN, I, 55). It certainly does seem somewhat extraordinary that these stories of "doctoring" the drink with the thumb-nail on the Orinoco should be told a century later of the Surinam Negroes, and up to a comparatively few years ago of the Akawai Indians of our own colony; but such is indeed the case. Thus Stedman writes that in the art of poisoning not even the Akawai Indians are more expert. They [Negroes] can carry it under their nails, and by only dipping their thumb into a tumbler of water, which they offer as a beverage to the object of their revenge, they infuse a slow but certain death. More than this, the same author, in a footnote, states that after the most scrupulous inquiry, and even ocular demonstration, he can offer the above as literally true (St, II, 266). In connection also with the hurubuh arrow poison of the Akawai, Dance adds that a little pressed in between the extremity of the thumb and thumb-nail, and thus conveyed to the paiwarri bowl, is said to poison the drinker (Da, 332). Here is another of Gumilla's alleged poisons, obtained from a particular kind of serpent very swift in its movements with a special ornament in a curl of fine hair which indicates the number of years that its head has borne them. A single hair cut up into small bits and placed in a mouthful of food causes most violent results—blood vomiting and death of the victim (G, II, 143). The same story is repeated by Father van Coll for the Surinam Carib. Perhaps, however, as Penard suggests, the Indians mean to imply the poison-glands which are found on the head of every poisonous

kind of snake. There are still other tales about snakes going the round of these same Carib, among others the snake spirit, the tulala, etc. (PEN, I, 56). At the mouth of the Waini Schomburgk came into possession of the *Chelichthys psittacus*, which the Indians call wurwurima, and whose bite they say is fatal. According to the statement of Warrau, the Akawai prepare a deadly poison out of this fish, which they dry and powder up finely (SR, II, 456).

735. Wassi poison is especially met with among the Akawai, they obtaining it from the Serekong, living at the sources of the Mazaruni, who alone know how to manufacture it, possibly from an arum. In Van Sack's *Reise nach Surinam* mention is made of an especially poisonous arum called punkin, the *Arum venenatum surinamense* of Woelfers (SR, I, 457-459). It is probably the white powder which the Kanaima is believed to rub into the flesh of his victim (SR, I, 323). Wisi [? wassi] was the secret poison of the Surinam Bush Negroes (AK, 261). Coudreau, on the Uaupes River, talks of a poison extracted from the taya plant, a species of arum, which was mixed in the cassiri and drink (Cou, II, 168). The plant which bears the caruna poison is a small tree covered with a brown bark. Its leaves are small, oval, and of a light green color. At the end of the branches grows a reddish-colored blossom, which falls off and is succeeded by small nuts covered with a thick husk. This nut has a hard shell and contains a farinaceous kernel. This kernel is a slow poison, which is said to be made use of by some tribes of Indians to destroy their enemies (Bol, 265). Bancroft describes the plant as a sort of cashew. The kernel is said to be a principal ingredient in the composition of a white farinaceous poison in the hands of the Akawai, which they sometimes conceal under their nails (sec. 279) when they intend to revenge an injury until an opportunity offers of putting it into the drink of the destined victim of this secret and slow but fatal vengeance (BA, 97-98). Gummilla speaks of apparently professional poisoners, *yerbateros*, so called from the fact that the poison they employed to slay their enemies was extracted from grasses, and for these poisons there were no known antidotes (G, II, 143).

736. With regard to theft there is but scanty information to be gleaned from the literature. If the Island Carib suspected anyone of having stolen something from them they endeavored to lay hold of him and cut him over the shoulders with a knife or the tooth of an agouti, as a mark of his crime and their revenge (RO, 523). Of the Orinoco Indians it has been said that all those nations had a horror of thieves, and yet had great propensity to steal, and knew how to do so with dexterity. Nevertheless, the things that their minds and hands hankered after were mean and of little value (G, I, 132). In describing the Indians of the upper Rio Branco, Ule

says that where civilization ends theft ceases (EU, 292). On the way to Curipung River, a branch of the Mazaruni, Boddam-Whet-ham draws attention to apparent aboriginal honesty in connection with the explorer's provisions packed in " quakes " ranged by the side of the path on poles. Naturally these formed very conspicuous objects, and though they must continually have been noticed by several parties of Indians, yet nothing was ever touched or in any way disturbed (BW, 197). The property of each individual (Makusi) is sacred, be it his hut, his chattels, or his provision field. Any violation of this principle, except in wartime, is hardly possible, and any bickerings with regard to mine and thine are exceedingly rare; but should they ever occur the contending parties submit to the decision of the council of men whom the chief summons for the purpose (SR, II, 321). Except among the Indians in close contact with European settlement, the fact of one's possessions being so few in number and simple in nature will probably account for one hearing so little of anything in the way of petty larceny. Children's property would seem to be especially respected by the parents (Pnk, I, 501; HiC, 230).

737. Concerning property or taboo marks I know of only one example of the latter among the Indians. " Spent " ite leaves, i. e., leaves from which the fiber has been removed, are hung on the outside of the huts where the Warrau women are confined or where they retire during their menstrual periods. In Dutch Guiana there are signs for indicating a taboo of entry into villages—e. g., two posts joined with a cord and leaves hanging therefrom, wooden idols rudely shaped, vessels with offerings to the genius of the village or of the road, but these are of Negro origin. So also in Dutch Guiana a wisp of straw, a piece of cloth, etc., laid close to an article will prevent it being touched or disturbed during the owner's absence (KM, 19).

738. With the more serious crimes there is an application, as already mentioned, of the law of retaliation, but with minor offenses committed by women and youths of both sexes recourse is had to a blow with a billet of wood or a paddle, to a whipping, or to stinging ants. The interference of the husband with a stout bush rope is frequently necessary to restore tranquillity among his women (HiC, 228). On the Orinoco Gumilla was informed that the whipping which the young men received at the time of the clearing of the field was to make them work properly and to cure them of their laziness, apparently whether they were guilty of the charge or not. Thus among the Saliva, when the time arrives for clearing the open plains with a view to planting corn, yucca, plantains, etc., they place the young men in line, some separate from the others, while a certain number of old men provide themselves with whips and rough thongs made of twisted kuraua. As soon as intimation is given that it is

time for work to commence, the whipping of these young men takes place, and, notwithstanding the cuts and marks which their bodies receive, neither groan nor complaint escapes them (G, I, 188). Instead of a whipping, a clubbing took place with the Akawai young men (sec. 752). On the other hand, this flagellation may have had quite another interpretation with a view to insuring a bountiful harvest from the Spirit of the Cassava (WER, VI, secs. 165, 166).

739. Among the Pomeroon Arawak, Warrau, and perhaps the Carib, there is to be met a framework made of split akkoyuro palm leaf, into the meshes of which certain stinging ants are fixed in such a way that their heads all project on one side and their tails on the other; some 30 or 40 insects may be employed at one time. This framework (fig. 333) is plaited into the shape of a riband (*A*) or a diamond (*B*) in such manner that the more the instrument is stretched the tighter are the insects clinched. It is used by parents

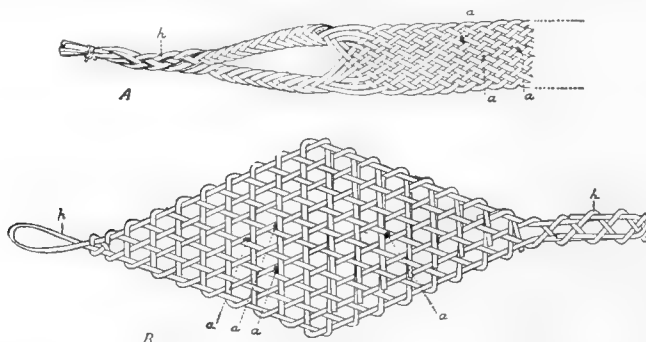


FIG. 333.—Ant frames as instruments of punishment.

with their refractory or disobedient children, boys being held by men, one at each arm, and girls by women. The frame is pressed for a few minutes at a time, with the tail ends to the flesh, on various parts of the body, the shoulders, breasts, waist, arms, and legs all having a turn. If the victim should happen to curse too much, it might be clapped over the mouth. The Arawak speak of the special kind of ant so used as *yoku*, and of the frame as *yoku-toburado* or *yoku-ekke*. Another method of punishing young people may be adopted by using the ants without any frame at all. Thus, the insects may be placed in the youth's hammock and he or she then thrown in and tied there. This is not an uncommon trick for the old Pomeroon Arawak to play upon some well-known lazy boy or girl at a *pai-warri*. It is not easy to believe, as has been elsewhere stated, that an Indian will ever willingly be bitten by ants in this manner just to show his courage (BW, 249) or capacity for the endurance of pain (Da, 266), except, of course, as a preparatory ordeal; e. g., puberty and marriage (sec. 884; WER, VI, secs. 269, 276), or success in the chase (WER, VI, sec. 230).

CHAPTER XXVII

THE CHIEF, AND EXERCISE OF AUTHORITY

On the mainland (740) ; on the islands (741).

General respect shown to the chief (742).

Status of the medicine man compared (743).

Chieftainship by heredity or marriage (744) ; by force and violence (745) ; by election after ordeals, on the Berbice (746) ; on the Orinoco (747) ; in Cayenne (748) ; on the islands (749).

Women chiefs (750).

Insignia and symbols of authority (751).

Chief's obligations, rights, and duties (752, 753).

Hereditary privileges (754).

740. In the absence of sufficient data it is somewhat difficult now to define the exact degrees of authority as met with among the more settled of the tribes. At any rate, with the most advanced there would seem to have been in the eastern Guianas a headman or tamúchi commanding the settlement or village, responsible to the chief of all the country, or yapotari, as he was known to the Oyana (Cr, 257). Peïto (sec. 754) among the same people was the name of a male unit, warrior, etc., as a subject distinct from his chief or tamuchi (Cr, 226, 236, 241). The original meaning of these terms is not obtainable, though in connection with the word peïto it is noteworthy that Schomburgk speaks of the slaves he met with the Carib being known as poitis (SR, II, 430). Humboldt talks of serfs or slaves as poitos (AVH, II, 333, 337). On the Orinoco Gumilla speaks of the chief central authority of the nation as a cacique or regulo (G, II, 21, 56), to whom the capitans apparently owed allegiance. This term of capitan or captain evidently corresponded to the tamuchi of Cayenne, and this again with the tûchao or tushaúa (lingua geral) of the Amazon and its tributaries, though this might signify not only the headman of a settlement or the oldest man in the maloka (KG, II, 82) but the chief of the tribe or nation (HWB, 241, 244). Other names for chief or captain are uil in Surinam, kaibisaka among the Waiyamara (ScF, 220), kobe-naharo with the Warrau, and nafudi among the Arawak. The last mentioned would, however, speak of the governor of the colony by this term. Manarwa is a common name or title among Carib chiefs (BrB, 40) : *Cf.* mahanarwa (sec. 751).

741. On the islands there were similar divisions of authority and several sorts of captains. There was (*a*) the captain of the carbet or of a village, whom they name tiouboutouli hauthe. This is when a man hath a numerous family and retires with it to a certain distance from others and builds houses or huts for to lodge it in, and a carbet where all of the family meet to be merry or to treat of the affairs which concern it in common. Hence it is that he is named a captain of a family or of houses. (*b*) A captain of a piragua—that is, either he to whom the vessel belongs or he who hath the command of it when they go to the wars; and these are named tiouboutouli canaoa. (*c*) Among those who have everyone the command of a vessel in particular, they have also an admiral or general at sea, who commands the whole fleet; him they call nhalenè. In fine, they have the grand captain or commander in chief, whom they call ouboutou. . . . This is the same whom the Spaniards call cacique . . . as some other Indians and sometimes also our savages do in imitation of them . . . Of these there are but two at the most in an island. They are also commonly the admirals when a fleet goes out. Or haply that charge is bestowed on some young man who is desirous to signalize himself on that occasion (RO, 518).

742. Though the authority of the chief might vary with the tribe, with the conditions of life—peace or war, etc.—he was nevertheless more or less respected at all times. The head of a Makusi settlement is represented by Schomburgk not only as being assiduously waited upon by his attendants but also as dining in solitary state (ScT, 63). He received his food regularly from the others and was said to speak in the first person plural (SR, II, 239, 321), just as the Surinam Carib children employed the plural when speaking of either of their parents (BON, 57). There were also certain insignia special to his rank and person (sec. 751). In the presence of the island cacique no man speaks if he do not ask or command him to do it (RO, 521).

743. Elsewhere, on the mainland, the authority of the chief was closely run by the medicine man or piài, whom Schomburgk regards as the second chief person in a settlement (SR, I, 169). Other authors would seem to look upon the medicine man occasionally as chief of the tribe (AK, 170). Indeed, it is quite possible that originally the temporal and spiritual heads of the tribe were centered in the same person.

744. A man might arrive at the chieftainship by inheritance, by marriage, by force, or by election. The son of an Oyampi chief is also tamuchi from the day of his birth; he is heir presumptive (Cr, 171). Among the Manwarin River Carib the old chief, John Wanyawai . . . had died of smallpox . . . but one of his sons named Peter had recovered from the disease, and succeeded to his father's

office (Br, 161). The succession of these chiefs [tushaua among the Uaupes River Indians] is strictly hereditary in the male line or through the female to her husband, who may be a stranger. Their regular hereditary chief is never superseded, however stupid, dull, or cowardly he may be (ARW, 347). Crévaux mentions an interesting case at Atures, on the Orinoco, of the captain being an Achagua, i. e., the son of an Achagua mother and Guahibo father, while the villagers were Guahibo (Cr, 351). This author gives another example of chieftainship by marriage among the Roucouyenne (Oyana): Taliman is not the son of a chief; he obtained the diadem of cayman scales by marrying the daughter of the late chief, notwithstanding the latter had left behind some male children older than the daughter (Cr, 280). Schomburgk some 40 years previously had also pointed out the succession in the female line among the Warrau: nationality is recognized only through the mother. The offspring of a Warrau woman and Arawak man is reckoned a Warrau. Right of succession also follows on the same lines. The sons of the daughters of a chief inherit the honors of the grandfather—not the sons of the chief—although this is not invariably insisted on (SR, I, 169). The Parikuta have two chiefs, a Waiwai and a Parikuta, while a Mao-pidyan is the chief of the Taruma (JO). But often, though inheritance be a qualification, birthright may have to be supplemented by certain ordeals the successful accomplishment of which is considered as proof of fitness for the office. Thus with the Carib Islanders, when one is to be made a captain, a bird called *onachi* is caught. The father assembles the oldest of the tribe, makes his son stand on a little seat, and, after exhorting him to vengeance on his enemies, he takes the bird by its legs and breaks and smashes the head. He must show no sign of grief, otherwise he will pass for a coward. The heart of the bird is torn out, and he is made to eat it so that he may have the courage to eat those of his enemies. He is then scraped and rubbed with the bird soaked in pepper water. He is then made to fast for a couple of days in his hammock, and his food is taken to him, not by a woman but by a man, or he would be less generous. Some can not stand the whole initiating (PBR, 250). Talking of the Pomeroun Carib, where the chieftainship was certainly hereditary, Schomburgk says that only courage and valor claim respect. The more foolhardy this one, the more conspicuous that one, the more shone the hero's name in the war songs. When a new chieftain has to be chosen, the candidate must submit to some of the most ghastly and terrible proofs to demonstrate his courage, endurance, and stoicism. Such ordeals consisted of a long especially strict fast, which con-

cluded with the starved individuals having to empty a calabashful of a strong decoction of peppers without pulling a face. If this were successfully accomplished, he would be slung in a hammock filled with ants and the sides bound closely round him, so that the tormentors might not escape, and there he would have to remain for hours without a murmur. Passing these ordeals successfully, he would be recognized as master with joyful cheering. His will was then that of the whole company (SR, II, 430).

745. Though it is probable that the chieftainship would occasionally be wrested from its possessor by violence, etc., there certainly do not appear to be any reliable records handed down to us of its occurrence. Schomburgk, in connection with the Warrau, speaks of the possibility of an individual assuming the reins of power upon the death of a chief, contingent on his courage and ability to hold his own as against the family of the deceased (SR, I, 169).

746. But independently of any birthright a man might, under certain circumstances, be appointed captain, etc., by election, so to speak, after submitting himself to various mortifications of the flesh to show his fitness for the post and passing the ordeals successfully. A very interesting and what I believe to be the earliest account of an election of a captain among Arawak is Van Berkel's description of what he saw on the Berbice River, somewhere between 1670 and 1675. There was a quantity of *pernou*, a kind of drink whereof everybody on this occasion may imbibe as much as he pleases. The drink is distributed by one of the prettiest young girls. . . . About mid-day, while the girls and women were still busy satisfying the requirements of the guests, there appeared the Indian who was to be raised to the dignity of captain. He was led by three captains, who with curious gestures kept up his courage, and being come into the middle of the house, he remained standing, holding his arms above his head. In the meantime the said three captains got ready, each having in his hand a maquary, which is a kind of plaited whip about 5 feet long, thick below and tapering above. Here they took it in turn to lash the poor Indian so brutally about the body that hardly any flesh remained from armpit to belly, all being torn to shreds in a terrible fashion. One could hear the cracking of the whips from outside the house, and yet he did not betray the slightest sign of suffering. Shortly after, when he was now as good as flayed, he was laid upon a wooden staging called *berbecot* by the Indians, and covered with leaves. Under this staging a small fire was kindled which gave forth more smoke than flame. Meanwhile a few leaves were raised now and then, to see if there was any danger of his fainting, which after a short time being noticed, they took him off the *berbecot*, poured over his face a bucketful of water, and now that

he was recovered went through some strange performance to inspire him with fresh courage. His broken skin was now again greeted by each of the said captains with eight or nine whip lashes, so that he looked like a beggar whose rags and tatters were hanging off him. This ceremony must take place again two or three weeks later before he can be raised to the dignity of captain, on which occasion, if he has a wife, she gets a lash or two so that she also may participate in the glory of her husband, though she does not wait for more than two or three cuts, but immediately runs away. After all the torture mentioned, the patient is brought back to his quarters, being a small four-cornered apartment, partitioned off in the house, just large enough to sling his hammock in. In the meantime the drinking went on steadily, and the wives appeared very happy at having such courageous husbands, who would never fear going to their deaths to take vengeance on their enemies; and singing songs brimful of their own husband's heroic deeds. When we speak of their war expeditions we shall have an opportunity of stating at the same time what deeds have to be carried out in order to be able to receive the dignity of a captaincy. So far as concerned the man of whom we have just been speaking, he had in a certain war faction beaten an old woman half dead, and furthermore thrown her into the water, had martyred her in it with a thousand agonies, and had finally, under unspeakable torture, put her to death. This is what their bravery consists of, to wit, to endure blows and to perpetrate the most gruesome cruelties imaginable (BER, 46-48). Van Berkel elsewhere mentions that when a man is raised to the dignity of captain his hair is cut off up to the ears, otherwise it generally hangs to the shoulder (BER, 19).

747. Gumilla has left us details of the necessary preliminaries for the choice of a captain as met with in the early eighteenth century. His experiences probably refer to Carib folk. "The candidate," he says, "has first of all to gather around him all his kinsfolk, and the others, either attracted by his valor or else influenced by him, his relatives, and friends. When he has, say, 100 men in his retinue he provides drink, invites the caciques and captains of his nation, tells them of his brave deeds, and finally seeks admission into the ranks of the captains. The judges being convened, he is placed, as naked as when born, in the very center of the house where the oldest captain with a whip made of well-twisted kuraua twine (pita) lashes him unmercifully from top to toe. The thong is then handed to the next oldest captain, who repeats the flagellation, and so on, with the remaining ones. The caciques and the large audience which is present keep strict silence. If they hear the slightest groan or ob-

serve the least sign of pain they cancel his application, and he is not allowed to enter for the two ordeals (*exámenes*) which remain. But granted that he has passed the test successfully, he is greeted with shouts, applause, and congratulations, and then everybody gets drunk. The necessary period having elapsed for his wounds, etc., to heal, the candidate's next step is to get another lot of maize beer (*chicha*), when a date is fixed for the meeting of the chapter (*cabildo*). Slung in a cotton hammock and completely covered in its folds, he is tied up with three strands—one at the head, a second at his feet, and a third around his middle. Each captain then raises the folds of the hammock at the sides and drops within it a caneful of vicious ants. If the victim heaves so much as a sigh or makes the slightest involuntary movement, though the insects be biting his eyelashes or other parts equally delicate, he is considered to have failed. Otherwise he is correspondingly congratulated upon having passed. The third ordeal, which might be described as something infernal, is carried out as follows: The judges (*magistrados*) and people generally having been assembled, a hurdle woven of small canes large enough for the candidate to rest on and covered with a varying number of plantain leaves, is hung about a yard from the ground. Lying on his back upon this rack or scaffold, a hollow cane stem about a yard in length is put in his mouth to breathe through. He is then covered from head to foot, both on top and at the sides, with plantain leaves, care being taken that those covering the head and chest are broken through to make room for and are tied to the above-mentioned cane, which is fixed vertically. When completely covered and enveloped in this mass of leaves they start a fire below the hurdle. This is called a mild, slow (*manso*) fire, because the flames only just lick the frame, but in reality it gives a decided roasting (*notable color*) to the unfortunate sufferer. In the meantime some of the leaders (*ministros*) are busied in stirring up the fire, others in diminishing it; some are very carefully watching to see if the victim moves or not, while others again are keeping an eye on the cane to see by the breathing whether the patient is weak or strong. After an appointed time the leaves are quickly removed. If they find him dead, everything comes to a close with mournful lamentation, but if alive all are jubilant, there is a lot of shouting, and the proceedings terminate with drinks to the health of the new captain (G, II, 92).

748. In the country of Wiapoco [Oyapok River, Cayenne], where the selection was held at their drunken feasts (JW, 345), to be advanced to the dignity of captain one must endure without the least stirring of the body nine extraordinary strokes with a holly wand from every captain, and that three several times. But that is not all;

he must also be put into a bed of cotton over a fire of green leaves, the thick smoke whereof ascending upward must needs be very troublesome to the wretch who is so mad as to expose himself thereto, and he is obliged to continue there till he be in a manner half dead. This speaks a strange desire to be captain (RO, 519-520).

749. On the islands, says Rochefort, when the Carib go to the wars, among all the captains they make choice of one to be general of the army, who makes the first assault. And when the expedition is over he hath no authority but only on his own island. True it is that if he hath behaved himself gallantly in his enterprises he is ever after highly respected in all the islands. But heretofore . . . there were many conditions requisite to obtain that degree of honor. It was, in the first place, requisite that he whom they advanced to that dignity had been several times in the wars, and that to the knowledge of the whole island whereof he was to be chosen captain he had behaved himself courageously and gallantly. Next to this it was necessary that he should be so active and swift in running as to surpass all competitors in that exercise. Thirdly, he who stood for the generalship of an island should excel all others in swimming and diving. A fourth condition was that he should carry a burden of such weight as his fellow pretenders should not be able to stand under. Lastly, he was obliged to give great demonstrations of his constancy, for they cruelly cut and mangled his shoulders and breasts with the tooth of an agouti; nay, his best friends made deep incisions in divers parts of his body. And the wretched person who expected that charge was to endure all this without betraying the least sign of resentment and pain; nay, on the contrary, it was requisite that he received all with a smiling countenance, as if he were the most satisfied man in the world (RO, 519-520).

750. Schomburgk mentions the case of an old Makusi widow woman, the largest proprietress of provision grounds at Curassawaak, on the lower Rupununi . . . who commanded over the whole settlement. Everyone appeared to be subservient to her, and, what was a riddle to the traveler's party, the Carib even submitted to her orders (ScG, 259). On another occasion he came across the chief's sister, a widow, acting for him during his absence (SR, II, 344). Kappler, in Surinam, also speaks of old women being the heads of Arawak and Carib settlements (AK, 203).

751. There are a few records of certain insignia, etc., peculiar to the holder of the chieftainship. On the Moruca (SR, I, 149) Schomburgk describes how the Arawak chieftain strutted along and waved his scepter (*Herrscherstab*). Among the Uaupes River Indians Wallace speaks of a beautifully ornamented murucu, or spear, of

hard polished wood, as the principal symbol of the tushaua or chief (ARW, 195). More recently there has been described from the same region (Rio Tiquie) an artistically carved chieftain's staff with handle made of a brown heavy wood, and another with a feathered decoration (KG, I, 260, 297). In the olden times of Cayenne there was a short pike or serpo, a weapon of distinction carried only by the Palicour chiefs (PBA, 167). Crévaux on more than one occasion speaks of a special ornament—the diadem of alligator scales—as being worn by the Roucouyenne Tamuchi (Cr, 208). The Makusi chief, in times of war, was distinguished by more sprightly feather ornaments, better weapons, and a special painting of the body (SR, II, 322). “In Surinam,” says Stedman, “the chiefs of families sometimes wear the skin of a tiger and a silver plate resembling a croissant, called by them a caracoly. They also frequently have small oval bits of silver in the cartilaginous separation of their noses, and sometimes a green or yellow-colored stone” (St, I, 388). Copper metal plates hung from the neck were also insignia of sovereignty on the islands. Thus the most important of the Carib Island ornaments are said to have been certain large plates (*médailles*) of thin copper, highly polished, without any graving, which have the shape of a crescent and are set in some hard and rare wood. They call them caracolis in their language. They are of different sizes, because there are some of them so small that they fix them to their ears in the form of pendants, while others are about the size of the palm of the hand, which they carry hung from the neck, from where they bang on the chest. They hold these caracolis in high esteem, not only from their very nature which, never undergoing rust, shine like gold, but because they constitute the rarest and most valued booty which they annually bring back from their incursions into the lands of the Arawak, their enemies; and also because it is the badge or necklace (collier) which distinguishes the captains and their children from the common herd (RO, 446). Another author speaks of their obtaining these caracolis from the Spaniards, the price for one of them being a Negro (PBR, 247). Bearing the above description of the ornament in mind the following passage of Brett's is rather interesting: “I saw Mr. Youd on his arrival at Georgetown after his double expulsion from Pirara and Urwa (Curua) Rapids. He was accompanied by a great number of Indians. . . . They were mostly Makusi; but some were Carib. Among them was Irai, the grandson of their great Chief Mahanarva. That young man was distinguished from the others, who went in procession to lay their wrongs before the governor, by a large crescent of gold set in a frame of polished wood, which he wore on his breast (Br, 64). Schomburgk had also made a note of this ornament on the same man (SR, I, 316). A quartz dec-

oration drilled lengthwise to distinguish it from others drilled transversely, constituted a symbol of authority on the Uaupes (ARW, 191). Bernau talks of some Akawai putting the captain's "cap" upon a certain person's head, intimating that they would yield obedience to him (BE, 202), and B. Brown mentions a chief or headman at a Makusi village on the Cotinga, wearing a hat with a wide rim made of young palm leaves (BB, 275). Elsewhere (ScO, 65) Schomburgk describes a Makusi chieftain wearing a crown of macaw feathers as a distinguishing sign (*Unterscheidungszeichen*). There is another reference in the island literature to a cacique's cap ornamented with precious stones (DAC, 450). It would also seem that the use of a particular stool was reserved for the chieftain among certain tribes, e. g., Wapishana (ScT, 54), Oyana (Cr, 283). At an Arawak settlement on the Corentyn, the chief's house was built unlike that of any of the others (StC, I, 304).

752. The qualifications of a chief are put to the test, not only for making the necessary preparations, etc., in time of war, but in time of peace, for giving intelligent instructions for fishing, hunting, and cassava planting. If he only rarely himself works in the field or takes an active share in the chase, he is at least charged, among the Oyana, with the duty of keeping the paths clear from one village to another (Cr, 253). He also exercises authority and extracts obedience in his arrangements for the daily routine of the settlement. His rights and his duties are very much alike throughout the tribes. The Arawak captain commands the services of the families of his different wives on emergencies, and in return he is required to become the principal in all feuds and to offer every one the rights of hospitality in its most extended sense. On any scarcity of provisions or prevalence of sickness all the branches of the family flock to the dwelling of the chief and live at his expense without the least doubt of a welcome (HiC, 228). It thus happens that the property of a chieftain is often consumed and he is forced, with his family, to go and reside with other relations and friends, at whose expense he lives until the cassava fields yield their next crop (SR, II, 460). The settlements of the members of a tribe (Warrau) consist at most of from six to ten houses, over whom there is a common head, but his authority is only recognized on the outbreak of hostilities with another tribe (SR, I, 169). During the dry season the Akawai chiefs or heads of families exercise more authority than at other periods. The security of a supply of ground provisions is a point in which all are concerned . . . The chief therefore calls his young men around him . . . to fell the trees . . . and in from six to eight weeks these are collected into heaps and burned . . . Those who are lazy or absent from these occasions receive most severe chastisement

or are driven out of the village. The punishment, which is uniformly inflicted with a moussy, or club, is not infrequently fatal (HiC, 235). The Saliva are said to have followed similar practices (sec. 738). Among the Guamo it was one of the duties of the captain to slash his flesh and with the blood so obtained to besmear the breasts of all those under his command who were sick (G, I, 164).

753. Some interesting accounts have been left us as to the occurrences taking place of a morning in the early days on the Orinoco and in Cayenne. At sunrise the Otomac of the Orinoco repair to the doors of their captain, and he determines which of them have to take to the canoes for fish and turtle and which to hunt for bush hog, according to the state of the season. Then he assigns others to do what work offers in the field, because each captaincy shares in common and divides both the labor and its fruits among the whole, the same arrangement holding good with their fish, turtle, cayman, and whatever else they obtain for food. As soon as the fishermen and the field laborers take their departure, the others devote themselves to play and merrymaking, these taking the places, on the following morning, of those who are out working to-day. They then devote themselves to playing ball on a ground set apart for the purpose in the neighborhood of the village (G, I, 168). The tushaua among the Uaupes River Indians has only a limited authority, principally in war, in making festivals, in repairing the malocca and keeping the village clean, and in planting the mandioca fields. He also treats with the traders and supplies them with men to pursue their journeys (ARW, 347). As in other tribes, every settlement among the Makusi has its headman. He has to fix the days for general holidays, for the dances, etc., gives the orders for food and drink to be set before the guests, and calls together in consultation the occupants of the settlement when the general welfare and interest demands it. He never gives his orders in a dictatorial sense, but in such a manner as, "Would it not perhaps be better for this or that to be done?" In battle, however, he is absolute commander. Every Indian on his return from hunting or fishing sends him a portion of his catch as a present (SR, II, 321). The authority of the chief among the Arekuna appeared to be greater than among the Makusi. Kaikerang, the chief, spoke always in the first person plural (SR, II, 239). In connection with the Passé Indians of the upper Amazon, Bates makes some very apt remarks concerning all absence of any assumption of dictatorial powers. "These chieftains [tushauas] appear able," he says, "to command the services of their subjects, since they furnish men to the Brazilian authorities when requested; but none of them, even those of the most advanced tribes, appear to make use of this authority for the accumulation of property, the service being ex-

acted chiefly in time of war. Had the ambition of the chiefs of some of these industrious tribes been turned to the acquisition of wealth, probably we should have seen indigenous civilized nations in the heart of South America similar to those found on the Andes of Peru and Mexico" (HWB, 299).

754. Among the Oyana the tamuchi's heirs have certain privileges over other children. When eating they have the right to sit on a cololo [a sort of bench], like the reigning chief, while their subjects have to squat on their heels. Again, they are distinguished from peitos (sec. 740) by certain honors rendered them in the tribes which they traverse. On the eve of his departure the young wife of the village chief takes care to paint Ouanica [a chief's son] from top to toe with ruku (Cr, 283), after the usual salutation procedure (sec. 809).

CHAPTER XXVIII

WAR AND WARFARE

Some nations of a pacific, others of a bellicose disposition (755).

Motives and causes for war (756); council of war (757).

Call to arms and declaration of war by word of mouth, drum, or shell (758); by arrow (759).

Commander in chief (760); commissariat and camp followers (761).

Methods of attack: Seldom open hostilities (762); generally ambushade, treachery, night attacks, etc. (763); use of fire arrows, concealed rafts, obstructed pathways, burnt peppers, women decoys (764).

Methods of defence (765).

Trophies and spoils of war (766).

Fate of prisoners: Scalped (767); eaten (768); by island (769) and mainland Carib (770); also by Arawak (771); Betoia (772); further evidence of the shell mounds (773); enslaved for and by Europeans (774); Indian servitude (775); negro slavery (776).

Ratification of peace (777).

755. What Father Acuña remarked of the Amazon might, in a measure, be said of the Guianas, that the near neighborhood of one nation with another did not at all serve to keep them in amity, one with another, but, on the contrary, they were in continual war, and were daily killing and making slaves of one another (AC, 85). The fighting, moreover, was not always necessarily extratribal. Thus Schomburgk mentions the Maionkong of the upper Orinoco being at war with the Guinau and Maionkong of this region and the lower Orinoco (ScF, 225). Some tribes were noted for their peace-loving proclivities, while others were similarly renowned for their fighting ones. Thus, the Achagua and Saliva, though they loved to don feather headdresses and other ornaments of brave soldiers, were never a warlike people (G, II, 91). The same may be said of the present-day Maku, who constitute a large proportion of the domestic slaves of other Indians. In sharp contrast to these folk were the Otomac and the Carib. The Otomac were a numerous nation, and used to carry on bloody and perpetual warfare with the Carib, with great losses to the latter until . . . when, through the agency of the Dutch, the Carib obtained firearms. They never turned tail. Before battle each would stimulate his passions by pricking his body with bone points, and say to himself, "Take heed! If you are not brave, the Carib must eat you!" The women assisted their husbands in

collecting the spent arrows, although they did not actually fight themselves. The Carib carried their predatory excursions from one extremity of the Guianas to the other. The terror which they inspired was not diminished by the fact of the Europeans occasionally joining their forces, painting themselves red and leaving themselves naked, but for the lap. Both Dutch and others would seem to have thus enlisted in the services of the Indians, and Gumilla evidently had good cause for complaint when he wrote to the governor of Esquibo [Essequibo] over the matter. He reports that with and without the assistance of these adventurers the Carib continue to attack the various mission stations, burning the churches and slaughtering both priests and people (G, 1, 78). Barrère has a note about the French from Cayenne disguising themselves in similar fashion with the rucu and loin cloth, and so taking possession of the lookout ship at the mouth of the Surinam River (PBA, 44).

756. Interesting records are available from various areas inside and outside of the Guianas as to the motives and causes for war. West of the Orinoco there is Depons' authority for the statement that from the poverty of the different tribes, the love of plunder never animated them to the attack. Their object in going to war was to devastate rather than conquer; to destroy rather than possess (FD, 49-50). On the other hand, Gumilla says that the chief motive of the reciprocal wars of the Orinoco Indians had for object the capturing of women and boys, and the sacking and pillage of what was almost useless. The original object of the capture was to insure, through the possession of captives, greater authority, a larger retinue, more laborers in their fields, and servants to wait on them. But the arrival of the Dutch altered the object of warfare and made it one of merchandise and gain by buying from the Carib as many prisoners as they could bring (G, 11, 73). In Cayenne Barrère mentions as causes for war some bloody outrage, or the killing of one of their people by another nation, while admitting that they often had less legitimate motives, such as a cold reception, or their refusal to attend a dance given by another tribe, or some similar trifling circumstance (PBA, 167). Among the Island Carib, if we are to believe Rochefort, the end they proposed to themselves in their expeditions was not to become masters of a new country, or to load themselves with the spoils of their enemies, but only the glory of subduing and triumphing over them, and the pleasure of satiating their revenge for the injuries they had received (RO, 531).

757. With regard to any so-called council of war Fermin relates the following concerning the Surinam Carib: When the head of a community has any reason for making war on another nation, he first gets all the captains of his own community to assemble. He

provides a big feast, and when all are drunk he gives his causes for complaint against the nation which he proposes to attack. As soon as the guests approve, they stain their whole bodies with genipa, decorate themselves with parrots' red feathers, of which they make crowns and waist belts, and in this war costume betake themselves to a place where, one after another, they make their war dances before going to fight. It is there where they sing their ancestors' and their own praises. They boast beforehand of the grand deeds they are going to perform and of the wrongs which their enemies have committed on them, and finally they yell out that they are forced to avenge themselves (FE, 88). The object of the war dance was that each warrior sought to kindle in his breast the Kaikutyi-yumu or Tiger (Jaguar) Spirit. Indeed, the Indian reasoned thus: "In cold blood I am shocked and find it impossible to kill a man, let alone to split the skull of an innocent fellow. But were I to do so, then it can not be out of my own impulse, but I must be forced into it by fury and lust of blood, which can not be anything else but the Tiger Spirit. To arouse this spirit in me, I must dance the Jaguar dance, imitate all his movements. I growl, I hiss, I swing the club just like he does when he crushes his prey with one blow of his terrible claws. And when I have once killed my enemy, I must likewise drink his blood and taste the flesh with a view to satisfying the spirit that impels me to the deed." Every man, animal, or other living form, however kindly disposed, can rouse in himself the Tiger Spirit which compels him to perpetrate deeds over which he subsequently feels remorse. He accordingly asks himself then, "How could I possibly have behaved so badly?" and the answer runs, "When the Tiger is in the man, then the man becomes like the Tiger." But this particular spirit by itself is not sufficient to decide upon offering battle, because Tiger can be decoyed into a trap. The warriors therefore danced the Snake or Charm dance, which aroused in them the spirit which inaudibly and invisibly draws near, strangles, and ties them up just like the snake at first bewitches its victim through fright, then chokes and afterwards swallows it. And since the boa constrictor [camudi] not alone possesses the spirit of enchantment but also swallows all kinds of animals, even including the tiger and the cayman, its spirit has to be specially invoked. At the same time the warriors drank of the war drink, which consisted of paiwarri wherein was a powder or liniment of worms from the putrid brains, heart, and liver of the jaguar, camudi, as well as from the most courageous and crafty of the enemies previously killed by them. The brains were supposed to awake cunning, the liver courage, and the heart put life into them. They likewise smeared their arms and clubs with a powder or salve made from the worms arising from

jaguar claws buried in the ground (PEN, I, 66, 67). So also with the Island Carib it was commonly at their public feasts and entertainments that they took their resolutions of engaging upon any war. . . . When they begin to have their brains warmed with their drink, an old woman comes into the assembly with a sad countenance and deportment. . . . She represents the injuries which the whole nation hath received from the Arawak, their ancient and inveterate enemies; and, having reckoned up the greatest cruelties which they have hitherto exercised against the Carib and the gallant men they have killed or taken in the battles that were fought between them, she comes to particularize those who were lately made prisoners, massacred, and eaten in some later engagement; that it were a shameful and an insupportable disparagement to their nation if they should not revenge themselves, etc. . . . As soon as the old woman hath made an end of her discourse, the captain makes a speech, to the same purpose, to make a greater impression in the minds of the audience; which ended, the whole assembly unanimously applauds the proposition and make all demonstrations imaginable of the justice of the cause. From that time, being encouraged by the words they had heard, they breathe nothing but blood and wounds. The captain, concluding by the applause of the whole assembly, and by their gestures and countenances, that they are resolved for the war, though they do not say so much, immediately orders it and appoints the time for the enterprise. . . . In this place we are to make this particular remark (says Rochefort), that they take these bloody resolutions when they are well loaded with drink and after the devil hath tormented them to egg them on thereto (RO, 524-525).

758. In pursuance with the unwritten law in virtue of which the members of a tribe are ready to take the field to defend themselves or to attack others, there is a call to arms either by word of mouth, by the beating of the war drums, etc., or the "mission of the arrow." The day appointed, if not immediate, may be individually checked by knots in a string, nicks on a stick, or seeds in a calabash. With regard to the beating of the drum, the Caberre place sentinels on the hills, whence a large stretch of the Orinoco can be seen. . . . On the first height whence the enemy is observed, the call to arms is struck, and the sound of the drum heard at the nearest settlement, which in turn repeats the signal, upon which all the people take to arms; the next settlement hears it, and so on. The whole nation is thus put upon the defensive (G, II, 74). Mention must be included here of the blowing of the shell, which seems to have answered a similar purpose. This was employed both on the islands and on the mainland. At the time of Juan Ponce de Leon's expedition, 1510, the whole of this wild

island [Porto Rico] was in rebellion and the forests around the fortress of Caparra rang with the whoops and yells of the savages [Arawak], the blasts of their war conchs, and the stormy rolling of their drums (WI, 785). About the same period, with A. de Ojeda at the Gulf of Darien, a number of them [Indians] advanced toward the fort, sounding their conchs and drums (WI, 654); and with Nicuesa at Cartagena, the Indians are described as well armed and with menacing aspect, sounding their shells (WI, 676). In more recent times, St. Clair speaks of the number of wild people [Arawak on the Essequibo] daily increasing, and their horrid blasts of war reechoing through the woods (StC, II, 6).

759. On the other hand, the call to arms may be noiseless, the emissaries silently announcing the fact that the tribe is at war without even saying a word, for it suffices to leave in passing a barbed arrow in a public place for all to take up arms. This notice is called the mission of the arrow (*correr la flecha*) and is tantamount to a declaration of a state of war (G, I, 134). This throwing of the arrow may thus apparently serve the twofold purpose of a call to arms and a declaration of war. Martius recorded a similar procedure among the Carib, Yuri, Miranya, and others (*Beiträge*, I, 97). The practice is also observed with the Guariua of the Yapura at the present day (KG, II, 316). When the Surinam Carib wished to declare war, a few macaw feathers were sometimes dispatched ahead, but as a rule action of this nature was considered superfluous (PEN, I, 67). Or, again, as with the Makusi, war may be waged without any preliminary declaration of hostilities whatsoever, the assailants making every endeavor to approach their enemy's settlement as close as possible by night, so as to attack it at break of day (SR, II, 321).

760. The evidence would appear to be variable as to whether or not a chief commander was particularly and specially appointed to take entire charge and control of the operations. In the islands the Carib specially appointed such a person (RO, 518). When these Indians [Surinam] went to war they chose one general commander, whom they distinguished by the title of uill (St, I, 402), but, according to another source this was the term applied to people of somewhat less responsible authority, the captains (PEN, I, 50). Inspired by the "Tiger" Spirit and preceded by the Spirit of Enchantment [the Snake] the warriors [Surinam Carib] followed the commands of the piaman, and set out to meet the enemy (PEN, I, 67). On the Pomeroon Brett speaks of the Indians making a war chief as leader in the coming fray (BrB, 36). "But during war," says Gumilla, on the Orinoco, "although they recognized their chief and captains there was no military discipline or subordination of any kind, and in consequence war was with them no more than a disorderly out-

break which was soon over, for every man retired when he felt inclined" (G, 1, 134).

671. Beyond the few references already and further to be hinted at in making preparations for war, Joest quotes Quandt in saying that the Indians [Surinam] used to make sticky the face and upper portion of the body and thus cover it with a sort of white feather down (WJ, 80). The Island Carib not only took food supplies on their expeditions but also made arrangements for obtaining it en route. As was said of them: Their custom is to go from island to island to refresh themselves, and to that end they have gardens even in those which are desert and are not inhabited. They also touch at the islands of their own nation, to join their forces, and take in as they go along all those that are in a condition to accompany them; and so their army increases, and with that equipage they get with little noise to the frontiers (RO, 527). It is recorded, in the early days of the conquest, that certain Carib who had been on a marauding expedition along the neighboring coasts [Gulf of Paria] shut themselves up at night in a stockade which they carried with them, issuing forth by day to plunder the villages and make captives (WI, 621). Schomburgk has stated that if the Carib [mainland] undertake a warlike expedition, women and children are left behind (ScA, 332), while Brett speaks of the warriors being paddled by captive women (BrB, 40). The island members of this nation also took along with them to the wars a certain number of women to dress their meat and look to the boats when they got ashore (RO, 526). The business of the women was also to pick up the dead (sec. 762), look after the prisoners (sec. 771), etc. They were even sometimes armed, as in Surinam (PEN, 1, 67).

762. Open war, to judge from the accounts that have been handed down to us, must have been comparatively rare. The following is a description of such an occurrence among the Makusi: If the opposing parties meet each other in the open, the proceedings begin with a war dance, wherein the contortions and gesticulations of the one side, combined with songs of contempt and derision, inflame the passions of the other. The fray begins at a distance with poisoned arrows, of which each warrior takes seven to the field. [Seven also constituted the complete outfit of the Siusi Indians' poisoned arrows (sec. 147).] When these have been shot, the battle follows with war clubs and man against man. If one side has to retire, they seek their dead before anything else to prevent them falling into the hands of the enemy, a business which the women have to see to, they following the men like pack animals. As the chief in times of war is given implicit obedience, he is distinguished by more sprightly feather ornaments, better weapons, and a special painting of the body. The

other warriors are also decorated differently (sec. 761) to what they are in time of peace (SR, II, 322). Among the Surinam Indians, in their open encounters, which happened very seldom, the bows and barbed arrows were their principal weapons of offense. With these they often killed at a distance of 60 paces (St, I, 401). Depons has mentioned that the Carib who inhabited the banks of the Orinoco alone openly attacked their enemies. Hence they enjoyed a reputation which made them the terror of all the surrounding tribes (FD, 49-50).

763. But this statement would not seem to tally in its entirety with the following description of these same people as recorded by Gumilla, the usual method of attack being apparently by night surprises. The fleets of the Carib proceed up (the Orinoco), he says, and in turn buy from friendly nations whom they have reduced to submission as many captives as they can get hold of in their battles no less barbarous and unjust. The price of each captive is two axes, two choppers, some knives, glass beads, and other similar trifles. Passing then on to hostile nations with extreme caution, their aim consists in attacking at night without being perceived and simultaneously firing the village. What with the terror of the flames and the noise of the firearms which the besiegers use, their only safety lies in flight, but as all the avenues of retreat are guarded the sacking is certain and the butchery lamentable, because they kill all the men capable of carrying weapons and all the old women whom they reckon useless, but they reserve for sale the rest of the women and young people. But the ship's course does not end here. They send back all their prizes to their own country in one or two armed canoes. They then continue their journey up the river without committing mischief on any nation, though it may be a hostile one; but they tell the friendly ones that they can not be blamed for having burned and sacked the village, because if the latter had only received them well and sold them provisions for their journey they would not have hurt them. On the other hand, having taken up arms against them they were forced to inflict punishment. But this is only an excuse, because they are resolved on another attack in the following year which they always bring off except among the Caberre nation, which is numerous, warlike, and which always worsts them. It is these Caberre who use the big war drum to call their men to arms, and the Carib, tutored by experience, leave them alone, pass on out of arrow shot, and never dare sleep on the western side of the river which they inhabit (G, II, 73). After collecting as many pieces [slaves] as they [the Carib] can buy among these very remote tribes, up to 600 leagues from the coast, they leave with the [local] caciques the ironwork and glass beads that have not been expended so that

in the course of the year, when they return in the following one [the caciques], may go on purchasing in their behalf. And in order that there should be no fraud two or three Carib Indians are left with each of those nations to keep an eye on the goods, which they call redemption or ransom money; but a better name for it would be slave money, because by its means so many innocent people lose their liberty. When taking their departure they warn the caciques that if on their return they find that their men have received any hurt or annoyance from them they will burn their villages and carry off all their women and children. Hence these "guests" are well taken care of (G, II, 77). "Indeed," as Depons says of the Indians in the captain generalship of Caracas, "deceit and treachery were ranked by them among the first of military virtues; poisoned arrows were in general use; they murdered their prisoners taken in battle, and not unfrequently devoured them" (FD, 49-50). Of the Orinoco tribes, all their warfare can be summed up as ambuscades, false retreats, night attacks, and other inventions (*inventivas*) (G, II, 99). In Surinam the Indians always fight their battles by night. Indeed, their contests resemble more a siege than a battle, as these broils consist only in surrounding the hamlets of their enemies while they are asleep, making prisoners of the women, boys, and girls, while they shoot the men with poisoned arrows, or with their clubs divide their skulls when they come to close quarters (St, I, 401). Rochefort thus speaks of the methods of the island Carib: They have this imagination that the war they should begin openly would not prosper; so that having landed in the country of the Arawak, if they are discovered before they give the first shock, or that a dog, as one would say, did bark at them, thinking it ominous, they immediately returned to their vessels, and so to their islands, leaving the design to be prosecuted some other time. But if they are not discovered they fall upon their enemies, even in their houses.

764. If they can not easily come at them, or find them well fortified in some houses that have good palisades (sec. 291), whence they play upon them with their arrows with some advantage, they are wont to force them out by shooting fire to the houses with their arrows, at the points whereof they fasten lighted cotton. And these arrows being shot on the roofs, which consist of grass or palm leaves, they presently set them on fire, etc. (RO, 529). Brett also has a reference to flaming arrows used by the same folk on the mainland (BrB, 139). [Such fire arrows are still occasionally used by the Matacos of the Gran Chaco (NOR, 134).]

Among details of treachery, ambuscade, and other "inventions" of military strategy on the part of the attacking forces may be men-

tioned the navigation of rivers on rafts concealed with grass or branches or on fallen trees (BrB, 96). Or else there was used a special kind of canoe with pieces of bark on top like a cover. In front were two holes where an Indian always stood on the lookout, while at the same time holes were to be seen on the sides of the vessel through which the warriors stuck their paddles in between branches, etc., which were tied to the canoe, floating on the water. In the distance it looked exactly like a floating tree trunk, out of which at a given moment a number of redskins showed up (PEN. I, 68). With the coastal tribes the attacking party would always wait to travel with the current, for, the tide being with them, the noise of their paddling would be diminished. So, also, were the journey a long one, they would preferably travel by night, sinking their corials and hiding themselves in the woods during the daytime (SR, II, 322). Among other tricks were the employment of bush ropes tied across the paths, all avenues guarded by sharp pieces of hardwood stuck on end, the irritating fumes of burnt peppers, and the use of women as "bluffs" and decoys. When ambushing the Boni Negroes the Oyacoulet Indians of the upper Maroni had stretched bush ropes across the pathways at the foot of the trees against which the Negroes stumbled in their flight (Cr, 35). "From Cayenne, it is stated by Captain Jean-Pierre," says Crévaux, "that when the old Oyampi wished to stop an enemy they surrounded their village with a circle of fire into which they threw handfuls of dry capsicums. It is impossible to fight when one is seized with an unconquerable sneezing" (Cr, 271). A similar trick was played upon the French by the Carib islanders thus: In the nighttime they made a shift to get a pot full of burning coals, on which they had cast a handful of pepper seed (*grains de pyman*), into the hut which the French had set up at their first arrival in the island [Grenada], purposely to stifle them, if they could, by the dangerous fume and the stupefying vapor of the peppers (RO, 534). [Outside of the Guianas, on the eastern shores of the Gulf of Venezuela, when first visited by the Spanish ships, the Indians in their canoes paddled swiftly to shore and plunged into the forest. They soon returned with 16 young girls, whom they conveyed in their canoes to the ships, distributing four on board of each, either as peace offerings or as tokens of amity and confidence. . . . The friendship of the savages, however, was all delusive. On a sudden several old women at the doors of their houses uttered loud shrieks, tearing their hair in fury. It appeared to be a signal for hostility. . . . Even those who were swimming brandished darts and lances, which they had hitherto concealed beneath the water (WI, 617).]

765. Of the tactics employed in defence the information available leaves much to be desired. Speaking of Cayenne, Barrère says that the Guianese do not palisade their villages. They do not know what it is to build forts or to make intrenchments. The forests are their ordinary defence and their greatest security (PBA, 165). It would seem, however, that some of the Island Arawak houses were palisaded (RO, 529), while on the mainland there is evidence that such structures were customary among Arawak and Carib (Akawai, Arekuna). With the former, the contained building was a well-appointed arsenal (sec. 291). Brett speaks of the Pomeroon Arawak making a "fort" by clearing a piece of ground in the forest and all the cut trees laid around in a circle, with their branches turned outward; in the middle a strongly built house, two arrows' flight from the surrounding wood (BrB, 36). [At the taking of Grenada, besides the mischief which the Carib did the French by an extraordinary shower of arrows and the barricades they placed in the avenues, they courageously opposed their landing and laid several ambushes for them, and when they saw that the French, notwithstanding their resistance, were resolved to come and forced them to make a retreat into the woods they rallied on an eminent place which they had fortified, and whereas it was somewhat steep on all sides save only one, which had a spacious avenue, they had cut down certain trees, of the boals whereof they had made long rollers, which, being lightly fastened at the top of the mountain, might be rolled down the descent with a more than ordinary force and violence against the French if they had attempted any assault (RO, 534).] In the story of a fight between the Carib and Arawak on the Haimora-kabura, a branch of the Moruca River, the Arawak place a massive log of heavy wood in the stream, and fix it tightly to each bank, so as to rest not two hands' breadth below the water surface. . . . A decoy fishing craft draws the Carib's first canoe toward the spot, which the former easily passes over, while the latter, warming to the chase, strikes up against it with such force that it is upset and the occupants thrown into the water (BrB, 40). In another legend of a battle with the Carib, the Akawai are said to have escaped by means of a tunnel when the former fired their fortified stronghold by means of flaming arrows (BrB, 139). Gumilla speaks of the sagacity with which the Orinoco Indians have invented means of escape, so that in order not to be followed they walk backward on moist soils, or in the environs of the rivers for the purpose of pretending that they are coming, when at the same time they are really going. And on lands subject to inundation, where they are forced to leave tracks and footsteps, they leave plenty. They go in and come out so many times that those who are following them get confused and upset (G, 1, 106). St. Clair makes

the statement—it is given here for what it is worth—that the Essequibo Indians will walk a whole day on tiptoe to deceive those whom they intend to attack, as by this method of putting their feet to the ground they leave a track resembling that of a tiger or jaguar (StC, II, 53). Such a practice, if indeed true, might account for the belief in the Kanaima “tiger;” i. e., a murderer in the guise of this quadruped.

766. It has been said by Gumilla of the nations of the Orinoco that when their members reach an age old enough to go to battle, they aspire in all their actions to be regarded as heroes, with the possibility of getting captaincies. For this reason they take great care of the trophies and spoils of war, and each one has as many figures, plaited with sufficient art and imitation (*propiedad*), out of very delicate palm leaves, as there are enemies whom he has killed. These figures are suspended from the roof (sec. 326), and after receiving his guests, he will say, “I am very brave. I have been through so many campaigns. And just see there how many enemies I have already killed. I shall be a great captain,” etc. (G, II, 91). Stedman in Surinam records that the Indians also scalp their male prisoners, bring home their hair, and even their bones, as trophies of war, and presents to their wives, unless they intend to sell them to the Europeans at Paramaribo (St, I, 401). In Cayenne the conquerors would hang the heads of the slain high up in the karbet or meeting house (PBA, 171).

767. As to the fate of the prisoners taken in war these were either killed outright, scalped, eaten, or enslaved. Frederici has expressed his views on the occurrence of scalping as follows: “Concerning Guiana we have the trustworthy statement of Stedman that scalping was practiced by the Carib. . . . The question arises as to how the occurrence of scalping in the Guianas is to be explained. It was not introduced by the Negroes for, with the exception of its occurrence in the nineteenth century in Dahomey, it was not known on the dark continent. The custom was highly developed among the Timucua peoples in Florida, yet the theory that it may thence have been transmitted to Guiana finds no substantial support. In a similar way there is no evidence that it was introduced by the whites. On the other hand, it does not seem improbable that it was brought in through the slave trade; that is, through enslaved Indians brought to Guiana from North America. Indian slaves from New England, Carolina, Georgia, and Florida were far dispersed by the whites, and a portion of them were brought to the mouth of the Orinoco and the shore of South America for pearl fishing. It is quite possible that some individuals or parties from among these Indians, most of whom belonged to scalping tribes, gained their

liberty, and joining some of the natives, introduced the custom of scalping among them" (GF, 423-438). These views require consideration. So far as Stedman is concerned, two excerpts are all that I can find from this author. One I have already referred to (sec. 766); the other is the following: . . . Also found a scalp fixed to the branch of a tree which we justly conjectured to be the remains of the unfortunate Schmidt, who was lost. This was the more surprising as we were at peace with all the Indians, and scalping was never practiced by the Negroes (St, II, 160). Now, some 30 years before Stedman, Fermin had recorded the practice of scalping as of apparently usual occurrence among the Surinam Indians generally. Thus, the only consideration they have for their women is that on return from their campaigns, they bring back the heads of hair (*les chevelures*) of the enemies they have killed, as a sign of victory, for their wives to adorn themselves with, and publish their triumphs (FE, 80). Again, even if scalping were not introduced by the Negroes, they certainly bore the reputation for practicing it, if we are to believe Pinckard, who, there is every reason to believe, was no less trustworthy an observer than Stedman. On the Demerara . . . they were surprised and defeated by the blacks; and very few of the soldiers escaped, most of them being killed, and their scalps, or bodies, fixed against the trees (Pnk, I, 372). Again, on the Berbice. . . . Our friendly conductor, M. Fenner, instantly took alarm, and begging us to desist (from sounding the huntsman's call) desired that we would quicken our pace, and be still lest we should bring down the Bush Negroes, who, if they should find themselves able to overpower us, would certainly take off our scalps, and perhaps not leave us our heads (Pnk, I, 481). With regard to Frederici's hypothesis of deserters from the pearling fleets introducing the custom, it is far more likely that any such unfortunates would more probably have been butchered by the coastal tribes. Certainly it seems quite as reasonable to believe that the occurrence of scalping in the Guianas was introduced from Florida through the Antilleans. Even if the direct evidence of scalping among the Guianese Indians is scant, certain it is that they preserved heads, hair, etc., as trophies (sec. 766), waist belts (sec. 543), etc. So, again, there is the possibility of its having been introduced from elsewhere in the South American continent. Thus, even up to a generation ago, scalping was certainly practiced on the upper Amazon. There is Simson's authority for stating that the Jivaros of the Pastassa River have a most finished mode of scalping, by which the victim's head is reduced to the size of a moderately large orange, maintaining tolerably well all the features. Only, the lips, point of the nose, and all the thicker fleshy portions, of

course, acquire too much prominence. To produce these ghastly objects the skin is cut around the base of the neck and the entire covering of the skull removed in one piece. This is then dried gradually by means of hot stones placed inside it, until the boneless head shrinks to the required size. They also wear their slain enemies' hair in long plaits around the waist (AS, 90). Again, another focus in South America where the habit of scalping prevailed was in northern Argentina, Paraguay, among the Chaco peoples (NOR, 132), but the source whence it was derived is not traceable (GF, 431-432).

768. In connection with cannibalism a distinction should be understood between the actual ingestion of human flesh, a practice to which the term is specially applied, and the drinking of fluid in which human ashes, powdered bones, etc., have been mixed (secs. 851, 854). The former habit would appear to have been associated with their slain enemies, the latter with their deceased chiefs, friends, and relatives, but not strictly so, because among the old-time Pomeroon Carib the enemy's heart would have been drunk in this manner and the flesh eaten in the orthodox fashion (SR, II, 430). So, also, among the Carib Islanders the Arawak victims' fat was preserved in little gourds, from which a few drops were poured into the sauces at their solemn entertainments (RO, 539). There is evidence of its practice as a matter of ceremony, for taste, hunger, or vindictiveness, while records of its existence are obtainable throughout the length and breadth of the Guianas, including the islands. Indeed, so prevalent was the custom that it is not surprising to learn, on the authority of Bishop las Casas, that the conquerors actually made special provision for this weakness of their Indian allies. Thus these inhuman creatures [Spaniards] were wont, when they declared war against any city or province, to bring with them as many of the conquered Indians as they could to make them fight against their countrymen. . . . But because they were not able to furnish them with all necessary provisions, they allowed them to eat those other Indians whom they took in war, so that in their camp they had shambles stored with human flesh. Infants were killed in their sight and then broiled and eaten. Men were slaughtered like beasts and their legs and arms dressed for food, for the Indians like the taste of these parts better than others (LaC, 46). The Holy Roman Church, through its ecclesiastical subordinates, also regarded cannibalism, under certain circumstances, in no sinister light. So fully were the missionaries persuaded that the only way to bring the savages [Indians] within the pale of the church was to give them the tastes and habits of civilized life that it became a matter of dispute whether they ought to be permitted to eat human flesh. And what

adds to the singularity of the question is that it was decided in the affirmative. Montenegro, supporting his opinions from the doctrines of Lesio and Diana, seriously asserts in his *Itinerario de Parochos de Indios* (lib. 4, trat. 5, sec. 9, num. 8) that in case of necessity they may eat human flesh without any species of sin, because it is not in itself evil (FD, 61). Though the Carib received the greatest blame for their anthropophagous propensities, other main tribal stocks of Guianese Indians, e. g., Arawak and Betoya, must equally be convicted of the habit.

769. Dealing first with the island Carib, there are records preserved in Chanca's account of Columbus's second voyage in which he himself took part. "These captive women [at Guadeloupe] told us," says he, "that the Carib men use them with such cruelty as would scarcely be believed, and that they eat the children which they bear to them, only bringing up those which they have by their native wives. Such of their male enemies as they can take away alive they bring here to their homes to make a feast of them, and those who are killed in battle they eat up after the fighting is over. They claim that the flesh of man is so good to eat that nothing like it can be compared to it in the world" (DAC, 440). From the same authority it is learned that when the Carib take any boys as prisoners of war they remove their organs, fatten the boys until they grow to manhood, and then, when they wish to make a great feast, they kill and eat them, for they say the flesh of boys and women is not good to eat. Three boys thus mutilated came fleeing to us when we visited the houses (DAC, 442).

770. In Cayenne [with the Noragues, Karannes, etc., i. e., Carib stock] the ordinary punishment of those who were made prisoners of war was to tie them to a forked stick (*fourche*) or to a tree, and after having spat upon them all sorts of blasphemies they discharged a volley of arrows in different parts of their bodies, and might let them die like that. Those who were more impatient of satisfying their vengeance, cut the flesh off, bit by bit, and buccaned it. The head of the unfortunate person was put high up in the karbet as a war trophy and to serve as a monument of their courage to posterity. There were those who employed the thigh and arm bones for making flutes (PBA, 171). The treatment of prisoners by the Carib of Cayenne was practically identical with that of their fellow people in the islands (RO, chapter xxi). Other tribes of the same stock, e. g., Oyampi (Cou, II, 436), and Ocoqua, were certainly flesh eaters. Fathers Grillet and Bechamel have stated that the Acoqua are quite another sort of people than the French at Cayenne imagine them to be, who account them fierce, cruel, treacherous, and perfidious to those they entertain. . . . For if one may judge of that nation, by

near 200 of them whom we have seen, they are an honest, affable, pleasant people, and are very attentive and ready to receive what is said to them. It is true they not long since exterminated a small nation and ate several of them, but I attribute this barbarity to the ill custom of the country rather than to the disposition of the people (GB, 26). Whether the human flesh was that of Redskin, Negro, or European seems to have made no difference to the palate of the Carib, who, certainly during the revolt of the slaves in Berbice, ate the bodies of those Negroes whom they killed (BA, 259; St, II, 193). In Cayenne there is an old account of their having killed and eaten three Englishmen (GB, 19). The Surinam Carib similarly showed no quarter for those of their enemies that fell into their hands. They only reserved the women and children, whom they sold as slaves to the Europeans. They buccaned and ate like wild beasts the bodies of their enemies (FE, 54). "On the upper Pomeroon the Carib chief told me," says Schomburgk, "that their ancestors usually brought home after a victorious combat an arm or leg of the slaughtered enemy as a trophy, which would then be cooked, so that the flesh could the more easily be removed from the bones, which were then made into flutes to be used as instruments on the next military expedition. Such flutes, made of men's bones, are still very common in the Carib settlements. At the big feasts which were celebrated immediately upon their return after a victory, these trophies played the chief rôle, and it was open to anyone to taste the cooked flesh; but in order to strengthen their courage and contempt for death—a characteristic which was ascribed to this expedient—they cut out the heart of the person slain, dried it over the fire, powdered it, and mixed the powder in their drink (SR, II, 430). In British Guiana, the Arekuna, of Carib stock, were said in Brett's time to be no longer cannibals (Br, 278), but their anthropophagous propensities had been noted by Monteiro and Ribeiro (SR, II, 208). The Kirishana and Maracana were also said to be cannibals (Cou, II, 395).

771. "When the islanders [Arawak] of Borinquen (=Puerto Rico) are attacked," says Chanca, "if by chance they succeed in taking prisoners some of the invaders [Carib], they eat them up in like manner as the Caribbees themselves do" (DAC, 445). Again, the Indian [Arawak] of Haiti (Santo Domingo) would think himself wanting in regard to the memory of a relation if he did not throw into his drink a small portion of the body of the deceased, after having dried it like one of the mummies of the Guanches and reduced it to powder (AVH, II, 354). So, on the mainland the Caberre of the Orinoco, also of Arawak stock, were undoubtedly cannibals. Gumilla describes these folk as rich in villages and population, and brave, so much so that the Carib fleets have always come out worse.

Their ordinary food is the human flesh of their enemies, whom they hunt and persecute, not so much for the sake of encouraging war, but to appease their hunger (G, I, 250). Even the true mainland Arawak enslaved, killed, or ate their prisoners. For this there is the authority of Van Berkel, an eyewitness on the Berbice in the middle half of the seventeenth century. If they catch females who are neither young nor pretty, such as they judge suitable to gratify their passions on, although they consequently nevertheless remain slaves, they slay them straight away; but if they are somewhat handsome they are delivered into the custody of other women, to wit, those who travel with them. As to the children, be they boys or girls, they are let live according as their fancy takes them. If they are pleasant of countenance, they may expect a hard domestic service, yet their lives are spared; but if they have captured a somewhat large number of prisoners, some of them are put to death for sport. But unfortunate is he, married or single, who, finding no chance for escape or of fighting to the death, happens to fall alive into his enemies' hands, because, in order to tyrannize over him, and to attain their object in a horrible way, there can not be any cruelties imaginable which they do not practice. . . . The fleet of which we have just spoken brought with them on their return two youths from the enemy vanquished [Carib on the Corentyn]. They traveled at night silently past the fort [Nassau, River Berbice], and had the same so well looked after that there was not the slightest chance of escape. These unfortunate wretches who had thus been captured on a fighting expedition were confined and shackled for about three weeks, during which time they were provided with good food and drink. In the interval, to while away the time somewhat in this miserable state they plait a pegall, or little basket used locally for a box. The prisoners are guarded by night, and in view of the fact that somebody is going to be burnt, the women prepare a quantity of drink called *pernou*. . . . On the day before he is to die I have on more than one occasion seen with my own eyes that they entertain him genteelly with food and drink, so that he might yet go hearty to his death. After midday everybody sneers at him as they take him from house to house, on which occasion he may receive quite unexpectedly a blow on the head from which the blood will flow, accompanied with the remark, "Your friends have done just the same to ours." When the sun is about to set a captain inquires whether he can see the sun quite clearly, whereupon, having answered "Yes," the captain says, "You shall never see it again!" This is his sentence. I have seen them leading to execution one who, being sufficiently proud not to lose heart by any threats or fear of subsequent torture, gave reply to the captain who passed

sentence on him with a heroic and disdainful countenance: "It is true that Fate is at present against me, but my friends will some day in the same way come to your people and demand a reckoning for the tortures you are about to inflict on me. Life is not so attractive that I can not easily leave it, though I am troubled at having to die without being able to take vengeance for my death," etc. At evening they give him as much as he requires to eat and drink, each one bringing him something. Now they tie his hands behind his back, and to each foot a long rope. In the meantime those who have been invited have repaired there, each provided with some maquarys, a sort of torch streaked with a certain stuff which has the quality of pitch, so that it may burn the better. In the evening about 7 o'clock they start kindling fires around and within the house, after which, the prisoner being placed in the middle of his enemies, is bawled at in a loud voice by the oldest captain, making a big hubbub, "Your people have caught my friends and treated them thus." Hereupon he thrusts the burning maquary into his skin, after which everyone who can but reach him attacks him. One sticks it in his face, another about the genitals, a third upon another of the tenderest spots, at the same time that he is being dragged hither and thither by the ropes. If with all this punishment he begins to get faint, they pause a while from time to time so as to make his sufferings last the longer, because they want to sport as much as possible. In the interval they drink again with one another, just as if they were good friends; and the sufferer being somewhat refreshed, the business is started again. This lasts until the morning, about a short hour before sunrise, because they have then to make an end of it, which is done by a captain, who crashes the miserable prisoner's head with a wooden sword [club]. Everybody now falls upon him with a knife; one cuts him a piece out of the buttock, another out of the thigh, a third rips up another spot; to put it shortly, each to get what he can. The cut-off flesh after boiling is put into the pepper pot and eaten for good food. I have spoken to two whites who had tried it and maintained that it tasted very sweet. The bones are buried in the earth, except a few small ones out of which they know how to make flutes. Amongst all this bustle the women sing at their ease, the song consisting of the relation of the tortures suffered by their own friends who had fallen into the hands of the enemy, together with the praises of these valiant men who are calling for vengeance for their deaths in the way described. It is a horrible thing to see. Besides that, the smell of the flesh, which is burnt incessantly with the maquarys, and the seething fat almost gushing out of it, is like to make a European not only squirm, vomit, and purge, but even also suffocate him. In the

meantime, what with all these tortures one must wonder at the courage of the prisoners, which is so extraordinarily great that they can thus bring themselves to die in the most horrible and painful manner without evincing the least cowardice, comforting themselves in this, that at some time or another they will be avenged by their friends (BER, 52-55).

772. Among the Betoya stock there is evidence of the ingestion of human flesh, etc., by the Tukano, and Tariana (of the charred remains of the decomposed corpse, sec. 854), and by the Cobeu (Kobeua). "These latter are real cannibals," says Wallace. "They eat those of other tribes whom they kill in battle, and even make war for the express purpose of procuring human flesh for food. When they have more than they can consume at once, they smoke-dry the flesh" (ARW, 347).

773. Were all historical evidence wanting for confirmation of the practice of cannibalism, there would still remain the middens, the bone and shell mounds, of the Pomeroon, Moruca, and Waini Rivers as silent but eloquent testimony of the prevalence of such a custom in earlier times throughout the neighborhood. Attention was first drawn to these mounds by Brett (Br, 420-444), especially to the one opened by him on the mission site of Warramuri, about a two hours' trip up the Moruca River. This tumulus was from 20 to 25 feet high, on a sand reef about 80 or 90 feet above the level of the swamp. I purposely say "was" because in more recent years it was in large measure destroyed by a piece of wanton clerical vandalism for the foundations of residential quarters, of which not even a single house post now remains. Im Thurn subsequently reported (IT, 410-421) the existence of others, and suggested the explanation that they were made not by the resident inhabitants of the country but by strangers; that these strangers came from the sea, and not from farther inland, and that these strangers were certain island Carib. So far as the facts were known to him, his reasoning is creditable; but in the light of more recent knowledge not conclusive, e. g., the oyster, the shells of which are found in the mounds, does occur on the Guiana coast along the shell beach just north of the Moruca, and the Aruwak, both island and mainland, like several of the continental tribes (secs. 771, 772), were similarly if not equally as anthropophagous as the Carib. Among the articles unearthed in these mounds have been mentioned human and other bones more or less destroyed, the shells of various mollusks, stone implements in the shape of celts, adzes, and sharp-edged quartz flakes that could be used as knives, hard slabs of clayey substance, pigmented clays, certain ornaments, and varying quantities of charcoal and ashes. What is really required is a thoroughly searching investigation of all these middens,

together with a careful and minute examination of their contents; but until funds and leisure are forthcoming to prosecute the work in a thoroughly scientific and systematic manner it is far better to leave these interesting records of the past alone in their solitary glory. At any rate, this is the opinion that has prompted my own line of conduct in connection with them.

774. The practice of enslaving one another had existed among the Indians from the earliest times, but after the conquest the trade was naturally encouraged and abetted by the Europeans, the religious, military, and civil authorities all lending their countenance and furnishing assistance in the work of lust and shame.

In 1509, Nicuesa, touching at Santa Cruz, one of the Caribbee Islands, had succeeded in capturing a hundred of the natives whom he had borne off in his ships to be sold as slaves at Hispaniola (Haiti). This was deemed justifiable in those days, even by the most scrupulous divines, from the belief that the Carib were all anthropophagi (WI, 640). The Portuguese, on the Amazons, had a custom of setting up the standard of the cross, a habit which they introduced throughout all places where idols were worshiped. "I know not," says Father d'Acuña, "whether they do it from a true principle of zeal, as the action itself seems to signify, for there is a great deal of reason to doubt that they set up the sacred sign of the cross only for a specious pretext to make slaves of the poor Indians. . . . [The Portuguese] in return for all their hospitality only leave them the sign of the cross, which they set up in the most eminent place of their habitations, commanding them to keep this holy sign with so great care that it may never be defaced; and after this, when this cross happens to be thrown down by the injuries of the weather, or to be worn out, or, it may be, to be maliciously broken in pieces by some of those idolatrous Indians who bear no respect to it, the Portuguese never fail to condemn them all as guilty of the profanation of the cross, and as such, declare both them and all their children and children's children perpetual slaves" (AC, 94). Slaves were also obtained for the Portuguese from the upper Rio Negro and Orinoco, about the middle of the eighteenth century. An Indian chief of the name of Javita, celebrated for his courage and spirit of enterprise, was the ally of these people. He pushed his hostile incursions from the Rio Yapura, or Caqueta, one of the great tributary streams of the Amazon, by the Rivers Uaupes and Xie as far as the black waters of the Temi and the Tuamini [branches of the Orinoco], a distance of more than a hundred leagues. He was furnished with letters patent, which authorized him "to bring the Indians from the forest, for the conquest of souls." He availed himself amply of this permission, but his incursions had an object which was not altogether spiritual, that of making slaves to sell to Portuguese (AVH, II, 353). Slavery with

these folk, or rather the Brazilians, continued until a comparatively few years ago, and, under a more or less modified form, is probably still in existence. Schomburgk records how the upper parts of the River Isanna, on the Rio Negro, are thickly inhabited by Indian tribes against whom an expedition had recently been sent under pretense of pressing them for the service of the Brazilian navy, but in fact to send them into the interior to the mines as slaves; and such was the terror caused by it that many of the villages were tenantless or inhabited only by women (ScQ, 253). So also at Caruma Mountain, on Parima, the same traveler speaks of a press gang being sent by the Brazilian authorities . . . Out of the 40 slaves, there were only 9 old men, 3 of whom were upward of 50 years old, and the rest composed of 13 women, and 18 children under 12 years, 6 of them infants (ScE, 183-188). Even up to the early eighties there is the authority of Crévaux for stating that slavery among the Ouítotos of the Yapura River is encouraged by the Brazilians, and the following are the prices current: A child at the breast is valued at an American knife, a girl of 6 at a cutlass or sometimes an ax, an adult man or woman up to a gun (Cr, 375).

The Spanish Jesuits, unlike the Franciscan, Dominican, and Augustinian monks, earned an unenviable notoriety for the drastic measures they resorted to in their so-called conquest of souls. To the eastward of the Upper Orinoco, near the Paruasi (Paruati), at a place known in later times as El Castillo, is a mountain with bare top projecting like a promontory. It is nearly 300 feet high and served as a fortress for the Jesuits. . . . The garrison which the Jesuits maintained on this rock was not intended merely to protect the missions against the incursions of the Carib; it was employed also in an offensive war, or, as they say here, in the conquest of souls (*conquista de almas*). The soldiers, excited by the allurements of gain, made military incursions (*entradas*) into the lands of the independent Indians. They killed all those who dared to make any resistance, burned their huts, destroyed their plantations, and carried away the women, children, and old men as prisoners. These prisoners were divided among the missions of the Meta, the Rio Negro, and the Upper Orinoco. The most distant places were chosen that they might not be tempted to return to their native country. This violent manner of conquering souls, though prohibited by the Spanish laws, was tolerated by the civil governors and vaunted by the superiors of the society as beneficial to religion and the aggrandizement of the missions. "The voice of the Gospel is heard only," said a Jesuit of the Orinoco, very candidly, in the *Cartas Edifiantes*, "where the Indians have heard also the sound of firearms (*el eco de la polvera*). Mildness is a very slow measure. By chastising the

natives we facilitate their conversion" (AVH, II, 219). At San Fernando de Atabapo the president of the Jesuit mission gave us, says Humboldt, an animated account of his incursions on the Rio Guaviare. He related to us how much these journeys "for the conquest of souls" are desired by the Indians of the missions. All, even women and old men, take part in them. Under the pretext of recovering neophytes, who have deserted the village, children above 8 or 10 years of age are carried off and distributed among the Indians of the missions as serfs or *poitos* (AVH, II, 337). The story of the Piedra de la Madre (Mother's Rock) given by Humboldt (AVH, II, 346) affords a good illustration of the subtle cruelties practiced by some of these old Jesuits. Barthelemy de las Casas, a priest and afterwards Bishop of Chiapa, presented himself in 1517 before Charles V in order to plead the cause of the natives. From the general principle of the natural liberty of man he drew the strange conclusion that the slavery of the Indian was a crime while that of the Africans was dictated by necessity. . . . As the result of his representations the Government was induced to purchase 4,000 of those unfortunate beings, whom they landed on the islands of Santo Domingo, Cuba, Jamaica, and Porto Rico. Thus Negro slavery was first established in America (FD, 44). Judging from the accounts left us by this good bishop concerning the outrages committed by his own countrymen on the hapless Indians elsewhere in the West Indies (LaC, 99, 53, 55), one is only surprised that with such examples before them the conduct above described of the Spanish Jesuits in the Guianas was not even many times worse than has been actually recorded.

The Dutch made no secret of their slave raids among the natives, and openly pursued the trade, either directly or indirectly, through other Indians, notably the Carib. In Gumilla's time the price which Dutchmen paid the Carib for a slave, whom they called *Itoto*, was a chest with key, and in it 10 axes, 10 choppers, 12 knives, 10 strings of glass beads, a piece of linen for a guayaco [loin cloth], a looking-glass, scissors, and, in addition, a gun, powder, and balls, a flask of brandy, and other trifles—needles, pins, fishhooks (G, II, 77). The price had evidently risen since the days of the first discoverers, because Francis Sparrow, whom Sir Walter Raleigh had left to explore the country, bought, to the southward of the Orinoco, eight beautiful young women, the eldest not 18 years of age, for a red-handled knife, the value of which in England at that time was but one halfpenny (Br, 49). It was not only the nations of the upper Orinoco and Rio Negro who furnished slaves (*poitos*) to the Dutch (AVH, II, 333), but also the upper reaches of the Essequibo and its tributaries. Thus Schomburgk at Tomatai, on the Dutch side of the Corentyn, ex-

presses himself: "We heard to our great astonishment that they [Carib from the River Wayombo, exhibiting a pass from the authorities at Nickerie, a Dutch settlement at the mouth of the Corentyn] purposed ascending the river, in order to cross over by land to the Essequibo, and thence to proceed to the Makusi country, with the intention of trading for slaves. They openly asserted that this was their object, and showed us guns and other articles of trade for that purpose, but they likewise assured us that the Carib of the Corentyn were to accompany them" (ScC, 298). On the other hand, as Stedman says, these kinds of slaves for the Dutch are only for show and parade, as they absolutely refuse to work, and if at all ill-treated, or especially if beaten, they pine and languish like caged turtles, even refusing food, till by affliction and want they are exhausted and finally expire (St, I, 400). In N. Darnell Davis's Records of British Guiana are to be found notices of some of the official enactments relative to the Dutch slave trade (Ti, Dec., 1888, p. 348). The Arawak were much esteemed, and their alliance highly valued by the Dutch, who by law exempted them from that slavery to which individuals of the other tribes were then liable on their being sold by each other (Br, 96). Schomburgk speaks of the slaves he met with the Carib being known as *poiti* (SR, II, 430). Other nations besides the Carib took part in the very profitable trade of capturing and exporting slaves. The Quajiva and Chiricoa fight with the object of making slaves, whom they sell to other nations for choppers and axes (G, I, 255). The Akawai also frequently made incursions on their interior neighbors, etc. (BA, 268), usually the Makusi, and sold them either to the Dutch or to the Portuguese (HiC, 240). Stedman mentions the case of an Arawak bringing in a captive Akawai boy whom he had taken in battle (St, II, 92).

St. Clair speaks of the "pusillanimous" Arawak stealing their [Akawai] children, and making prisoners of their young men and women, whom they barter away for rum and other commodities to the white inhabitants lower down the [Essequibo] river (StC, II, 51).

Instead of exporting slaves certain of the nations kept them for their own use, obtaining them either as prisoners of war, as the result of special slave raids, or by purchase. Thus among the Makusi a man may sell his children, in spite of the bitterest tears of the mother, to a married couple who have none. The price is the same as that demanded for a dog, i. e., a gun, ax, or something similar, but the buyer has in addition to give some little things, e. g., beads, to the relatives, who report themselves in considerable number to the new father (SR, II, 315).

775. It is noteworthy that on the mainland the servitude of Indian slaves to other Indians—a condition of affairs which exists up to the

present day, e. g., the Maca (ARW, 354) or Maku—was almost invariably of the nature subsisting between friend and friend rather than one of master and servant. A recent writer describes the Maku as being treated in the households of the Tiquie River, upper Rio Negro, rather like tame animals, the girl slaves acting as free women for the young men (KG, I, 269). This good treatment meted out by Indians to Indians was well known to the older writers. Thus, says Bishop Las Casas, the term "slave" does not signify the same thing among the Indians as among the Europeans, but only denotes a servant with the former, or one that has some particular obligation to assist, as in our necessary affairs, so that to be the slave of an Indian is to be but one degree below his son. It is to dwell in his house, to take care of his goods and silver, to wait on his wife and children, which is consistent with the enjoyment of his liberty. He sets the house in order, sows the land, and does any necessary work as occasion requires. And his master on his part treats him with a great deal of kindness and humanity, as if he were not obliged to render him this service (LaC, 171). Father Acuña had previously furnished a similar account concerning the Agua or Omagua of the Yapura. These Agua make slaves of all the prisoners they take in war, and use them for all kinds of service. However, they treat them with so much love and kindness that they make them eat with themselves, and there is nothing in the world displeases them more than to desire them to sell them, as we found by experience on several occasions . . . ; in a word, they gave us signs enough to convince us that they had a greater esteem for their slaves than for all the rest of their goods and that they had rather part with all they possessed besides than part with them (AC, 120). With the Island Carib, when there happened to be among the female prisoners of war any that they liked, they made them their wives, but though the children born of them were free, yet were the mothers for their part still accounted slaves (RO, 545). The same people practiced castration on their boy prisoners (sec. 507). As soon as an Indian [in Cayenne] is captured in war he is deemed a slave, and one forthwith cuts his hair to make him understand that he is indeed so. In fact, hair is a sign of liberty, and only those who are free let it grow, and never cut it unless they are in mourning (PBA, 173). From the *Archivos de Indias*, quoted by Rodway (Ti, 1895, p. 8), it is evident that the practice of cutting prisoners' hair as a mark of slavery was followed by Arawak as well as Carib.

776. It may not be generally realized that the Carib Islanders employed Negro slaves. "In St. Vincent and Dominica there are Carib who have several Negroes for slaves, obtained partly from the English possessions or from some Spanish ships formerly

stranded on their coasts. They call them tamons, i. e., slaves. They make them serve them in everything with as much obedience, readiness, and respect as the most civilized people could do" (RO, 494).

777. It has sometimes happened that tribes hitherto at war have been anxious to sue for friendship, and one or two incomplete accounts have been handed down as to the procedure by which peace under such circumstances has been concluded. Thus, on the Orinoco, as soon as the preliminaries were arranged, the parties confirmed it, after their barbarous fashion, by interchanging as many blows with a cudgel as amounted to complete satisfaction. [Each member of tribe A receives a blow for each member of tribe B that he has killed, and vice versa, no canceling. Thus each side gets full satisfaction.—W. E. R.] (G, I, 317). In Cayenne, the method of concluding a truce, which he states is very rarely seen, is thus described by Barrère: The interested party goes into the enemy's country. Usually it is the captain, with the chief men and all the youths, who march in battle array, well equipped with bows, arrows, clubs, stone hatchets, and other implements of battle. When at one or two short days' journey from the karbet [meeting house] they depute some of their number to go and inform them that they wish to be friends and to live henceforth on good terms with them. If the offer be well received, they tell those who have halted to come along. The two nations then range themselves in order of battle, just as if they wanted to fight. They sling abuses and reproaches at each other for all the outrages committed. "You stole our women," says one; "you killed and ate my father, cousin, brother," etc., cries another. . . . Finally, after all these animated speeches, they suddenly throw their arms to the ground with loud manifestations of joy and then proceed to the karbet, where they drink for three or four days (PBA, 174).

CHAPTER XXIX

TRAVEL, OVERLAND

Signs and signals on the road (778); artificial landmarks, cairns, etc. (779); rock engravings (780, 781); rock paintings (782); natural features (783).
Tracking: Sense of locality (784).
Traveling in single file (785).
Accompanied usually by their women (786).
Means of travel, etc.: Bush-rope ladders over the sandstone terraces (787); leaves and spars over swamps (788); obstructing trees (789); tree climbing (790); streams waded or bridged (791).

778. To insure a safe return from the journey about to be undertaken, Appun has noted the following: Hardly had the troop of Arekuna taken 100 steps from the bank of the mountain stream than they suddenly right-about wheeled until they got on the river they had just left, then right-about wheeled again, and now for the first time, without further delay, started on their journey (App, II, 312). In speaking of the Orinoco Indians—and the same holds good throughout the Guianas—Gumilla says that in traveling they [Indians] break off young branches as they proceed, because there are no roads and a track is very rarely formed. Indeed, any pathway is usually covered with a layer of dry leaves a hand deep, and so they watch the broken twigs, and by means of these the Indians can tell how long it is since that route has been traversed, because the broken twig annually shoots forth anew (G, I, 259). So also St. Clair: It is astonishing with what speed and certainty these people [Guiana Indians] travel through the immense forests of the country. When they intend going far into them they break a small twig at every other step as they walk on, and by this means they are certain of finding their way back to the same spot (StC, II, 35). Again, as Dance says, every now and again the Indian breaks a branch as an indicator to guide his retracing footsteps homeward (Da, 252). But the trees themselves might also be marked. Thus the path [between Berbice and Essequibo] was barely 12 inches wide, marked by notches in the trees (ScA, 329). "Indians could only have guided us," says Schomburgk, "and they directed their course mostly after broken branches or marks cut in the trees, sometimes standing for several moments to consider in which direction to turn" (ScG, 251). Pomeroon Indians have told me that since the advent of the balata

bleeders, who make similar marks, the cuts that used to be made in the bark are now more or less discarded here and some other sign employed to denote, for the information of those following, the direction taken. Thus a stick with another (the pointer) fastened on top may be stuck in the ground, or else two or three big leaves, tied by their stalks, may be hung up on an overhanging bough; but as often as not there is a preconcerted arrangement as to what the exact signal post or sign is to be.

779. What may possibly have been other signs or signals on the road in the Cotinga district, Barrington Brown observed on the sides of the paths over the savanna mountains. These were small artificial heaps of stones, some 3 or 4 feet in height, to which the Indians with him, in passing, had added by picking up a stone near by and dropping it on the heap. He could never learn their object in so doing, for when questioned about it they only laughed (BB, 276). [In the Gran Chaco the Indians, upon going over a pass, will place a stone on the ground so that they should not get tired on the way (NOR, 314).] I might draw attention here to other methods in which the stones may be placed. The following example of rocks placed in lines is of interest in that it has been visited at an interval of something like 40 years by Barrington Brown and myself, each of us being supplied with absolutely different explanations, only common in that they were commemorative of an apparently important event. "On my way from Cara-Cara to the Ireng," says Brown, "we passed a number of lofty mountains of about 3,000 feet in height, named Waetipu, near the foot of which our guide pointed out a row of small white quartz rocks, placed close together, and occupying a length of some 50 yards. These, he said, had been deposited there ages ago by a party of Carib Indians who came from the westward to kill a gigantic 'tiger' which lived in a cave near by. The tiger was an exceedingly fierce black one, but the brave band surrounded its lair and transfixed it with poisoned arrows as it tried to escape. To commemorate the event they painted some figures in red on the rocks of the cave, which were pointed out to me, and each man then picked up a stone and, standing in a line with his comrade, placed it on the ground. If this be correct there must have been about 300 warriors engaged in the undertaking" (BB, 189). In comparison I am furnishing the reader with a transcript of my diary, taken in 1914. I passed a series of stones lying on either side of the track which I was told had been placed there by Patamona, on the last occasion that they had come to fight their compatriots at Caricaparu. I was also informed that, in the old days, when people set out on a fighting expedition, each individual shifted a stone from a certain heap or circle and made a fresh heap or circle

near by. When they returned from the fray they replaced the stones—each man the one he had originally shifted—and thus they had a reminder of how many had been slain. [The religious and other aspects of such stone heaps have been discussed elsewhere (WER, VI, sec. 174).] Brown also supplies a description of stones set up in a circle met with on a small open-wooded plain in the neighborhood of Itabay village, between the Ireng and the western elbow of the Rupununi. In the center of this opening there was a circle of upright slabs of greenish felstone porphyry, through the center of which the path led. The slabs were from 2 to 3 feet in height and some 5 to 6 feet apart, placed in a true circle of about 50 feet in diameter. . . . They had not been dressed, but their forms resulted from the manner in which they split up on weathering, and they were portions of the rocks of the neighborhood. On one was a froglike figure cut in deeply. . . . The Makusi travelers had bent down and broken some of the slabs, thus showing that they do not view them with any amount of reverence. The guide said he did not know anything about them (BB, 144).

780. As to rock engravings (pl. 176), it is to be regretted that but little information of scientific value will be available until a complete survey of them, or certainly of the more important ones, can be completed with casts, tracings, or good photographs. In the present state of our knowledge it seems idle to discuss any of the questions that have arisen as to their representation or meaning if, indeed, they have any. All that can be said definitely is that they are met with in the vicinity of rapids and falls, where the Indians traveling up or down are necessarily compelled to make a shorter or longer halt; in the neighborhood of permanent settlements; that instead of being the work of one individual each figure is probably the resultant labor of hundreds; and that, as on the upper Rio Negro, they are apparently being executed up to the present day. [The reader should consult *Südamerikanische Felszeichnungen* (KGF) in this connection. Among other things, the author recognizes certain of the mask-dance decorations in some of these engravings, but his general conclusions will not, it seems to me, receive acceptance. He gives a good bibliography of the subject.] The geographical limits along which the engravings are found are given by Schomburgk (SR, II, 225) as having been traced by him through 700 miles in longitude and 500 in latitude, or scattered here and there over an extent of 350,000 square miles (ScE, 159).

781. The most that this section can be of service for is to give the references only to the better-known examples in the Guianas, according to the rivers, etc., along which they have been found. Less important ones, as those on the Mazaruni and Potaro, are omitted.

River Maroni, Cayenne, near the Ile Portal (Cr, 143): On the Montagne d'Argent, on the coast between Cayenne and the River Oyapock, the rock carvings were claimed to represent the arms of Charles V by the Portuguese when they had a dispute with the French over their boundary line (Cr, 145).

River Oyapock: Illustrations are furnished (Cr, 210).

River Essequibo, Waraputa Falls: The rocks which bear inscriptions are very numerous. These rude figures resemble those which I had seen in St. John's, one of the Virgin Isles, which doubtless are the work of Carib who formerly inhabited that island. We had looked in vain for inscriptions which, according to Humboldt, Hortsmann had discovered on the banks of the Rupununi, and I was therefore happy to see those just alluded to (ScG, 275). Illustrations (SR, I, 320; IT, 394).

On the Yapore, upper Essequibo, we stopped at one of the rapids, where the men showed me a head roughly notched out (*dessinée à l'entaille*) on the rock. It is Schomburgk who made his portrait here, say the Atorai. The old traveler is legendary from the Essequibo to the Orinoco (Cou, II, 345).

Camuti or Taquiari Rocks, upper Essequibo: A Carib pointed out some Indian picture writing which was more regular than usual. Figured (ScE, 159).

Cuyuwini Creek, upper Essequibo: We passed numerous erratic blocks of greenstone, on two of which we saw some Indian picture writing. On asking the Taruma who had done it, they replied that women had made them long ago (ScE, 168).

At Babumana Cataract, upper Essequibo, there is a lot of Indian picture writing cut on a large granite rock, being chiefly representations of monkeys and froglike individuals (BB, 244).

On Quitaro River, beyond Ataraipu Rock, on a group of granite rocks near by we saw some old Indian sculpture, like the image of a sort of rising sun with a human visage (BB, 152).

Berbice River: A ledge of granite rocks, on which we observed a great number of picture writings . . . neither so regular nor on such a large scale as those we had seen in the Rivers Calabala and Corentyn (ScA).

Corentyn River: We passed next morning a remarkable rock called by the Carib Timehri (probably a corruption of Tepu or Tipu mereme, i. e., Rock painted). It is not only distinguished for its size, but there are a number of gigantic figures engraved on it, one of which measures more than 10 feet. Illustrations (Br, 314).

Rio Branco: About 12 miles distant from Marua, . . . the Indians told us of some very remarkable boulders of granite which they call tamurumu (cf. Timehri, Tepu mereme). The highest, which they

call the abode of the spirit Makunaima, they described as 300 or 400 feet high, and covered with hieroglyphic figures like the rocks at the cataracts of Waraputa, etc. (ScF, 213).

Rio Branco: On the Suquadie River, a branch of the Ireng, near the Twin Fall, upon some flat jasperous sandstone rocks exposed on the savanna, were numerous carved figures of the sun, snakes, spirals, and circles, formed by Indians of a bygone time (BB, 288).

Rio Negro: At Arruyabai the figures were in the form of a labyrinth and were remarkable for the depth to which they were cut in the rock [a ledge of granite]; and although the footpath leads over these rocks, and thousands may have walked over them, the figures are not at all obliterated. An attempt to imitate the figures at a later period, and probably with a hammer and chisel, is nearly effaced, and shows more strongly the peculiar skill of the original workmen, whoever they might have been (ScQ, 255).

At the Ilha de Pedra, on the Rio Negro just below its junction with the Rio Branco . . . They [engravings] are numerous and consist of representations of men, birds, and animals. On one large boulder 13 figures representing men are arranged in a line as if dancing. The most remarkable figures, however, are the representation of two vessels under sail, the smaller a two-masted vessel, the larger not unlike a galleon. [Illustration given.] These figures, it should be remarked, are not so deeply cut as those on the Corentyn or at Waraputa on the Essequibo (ScQ, 261).

Uaupes River, etc. (ARW, 362; KGF, etc.), Cassiquiare River, just south of the Pomoni: Several circles and lines on some granite rocks (ScQ, 248). Figures (KGF, 2, 8, 10).

Orinoco River: Rock carvings on some hills a few miles from the Vichada River near a Guahibo village, representing the moon, and hence called locally the Cerro de la Luna (Cr, 549).

In the Western Guianas, Rojas has written some interesting descriptions of certain Venezuelan rock engravings and paintings (AR, 176-198).

782. Besides engraved rocks there are reliable descriptions of painted ones, and though we may lay claim to a little knowledge of some of the facts concerning the former, we certainly are in an unhappy state of entire ignorance concerning the latter. On the Urawan, a branch of the Cuyuni, drawings of frogs on the rocks seem to have been made by rubbing on the rock with some harder substance (McTurk, Ti, June, 1882, p. 129). Barrington Brown speaks of a large white sandstone rock ornamented with figures in red paint, at Amailah Falls on the Curiebrong, a branch of the Potaro. When in the Pacaraima Mountains, on the Brazilian frontier, Im Thurn heard of the existence of similar paintings in that

neighborhood, but was unable to find them (IT, 391). I understand that he met with them at Mount Weitipu. In the Amazon region, on the sierras of Montealegre, Wallace passed by a high cliff on which were some of the picture writings he had so much wished to see. They were executed in a red tint, produced apparently by rubbing them in with pieces of the rock, which in places is of that color. They looked quite fresh and were not at all obliterated by the weather, although no one knows their antiquity. They consisted of various figures, rudely executed, some representing animals, as the alligator and birds, others like some household utensils, and others again circles and mathematical figures, while there were some very complicated and fantastic forms. All were scattered irregularly over the rock to the height of 8 or 10 feet. The size of most of the figures was from 1 to 2 feet (ARW, 104).

783. But should the track by any chance fail them, or the route traverse country new to them, sun, stars, and, it is alleged, even trees may assist in directing the Indians toward the situation of their proposed goal. It is by the position of the Pleiades that the Akawai, when traveling by night, are guided in their land journeys over the stony plains of the interior (HiC, 248). As for trees, St. Clair is responsible for the statement that should folk happen to lose the direction in which they are going, by looking at the north side of the large trees they are shown which way to steer; as on that side their trunks are always covered with a short moss (StC, II, 35). In Cayenne, Barrère says that trees act the part of a compass; their tips lean more to the south (PBA, 180).

784. The most valuable qualities of the Indians are their agility, dexterity, and the intuitive tact of tracking, or discovering footsteps in the bush (HiC, 231). Their acuteness in discovering the trail of an animal and its species is also surprising (StC, II, 35). They not only hear sounds in the woods which are imperceptible to others, but judge with surprising accuracy of the distance and direction from whence they proceed (Pnk, I, 374). Bates reports having noticed in Indian boys a sense of locality almost as keen as that possessed by a sand wasp. He gives an example of his little companion, about 10 years of age, who had been playing all the way with bow and arrow while they had been hunting, and yet, almost unconsciously, had noted the course taken (HWP, 196).

785. Leaving now out of account such an exceptional circumstance as an individual losing his way, a track once made, even by a single Indian, is easily recognized by the sharp-eyed natives. . . So exactly do they follow the narrow trail—always in single file—that often for miles the very footsteps of the explorer are trodden by his successor (BW, 194). This walking in single file is characteristic, the

head of the party, a man, in front. On the Canje Creek one man, who had three wives, packed upon their backs very neatly the whole of what he had to carry away. Then, taking up a long staff he marched on before with lordly step, the wives following him in silent train, one after another (Pnk, 1, 435). [In Surinam] the head of the party always walks in front with some attire to distinguish him from the others (FE, 87). But occasionally those in the van may have cause to fall back to the rear, as was the case with certain Orinoco tribes when on the march. The nomad Guajiva and Chiricoa were wont to wander thus in file: First of all, the robust young men, armed with bow, arrow, and spear. Now, the grass which grows on these plains ordinarily exceeds the height of a man, and so the individual in front has the labor of opening and pressing it out on either side, as well as trampling upon it with his feet to open a pathway. But what with bare feet and the grass cutting him, he soon gets tired and wounded, drops out of line, lets it pass—it is a league long—and resumes a position at the very last. The path that he now treads is a good one, and thus all those in front manage to rest themselves in turn. After the robust young men come the married ones, with weapons, bearing the youngsters on their shoulders. Then the old men, who can still travel afoot, with the weak and old women. Next come the married women, burdened with their baskets containing plates, cooking pots, etc., and often with one infant squatting on top and another at their breast. The bigger children walk close alongside their mothers. Bringing up the rear are Indians of very great strength, each one supporting a crude basket in which is an invalid—man, woman, old man, or boy. The procession closes with the fighting people and those who, tired out, have retired from the van (G, 1, 253). The Indians' habit of walking in file is so natural to them that they keep it up when going from one house to another at their settlements (Cr, 115). Furthermore, their peculiar habit of walking, with the toes inward, enables them to walk the smallest path with comfort. . . They ridicule our [European] method of walking and observe that in a wood we take up too much bush room (ScG, 247).

786. Speaking generally, the Indian does not like to leave his wife and children at home when he undertakes a journey of several weeks' duration, partly from jealousy, partly from indolence, having all his wants provided for by his spouse (ScG, 241). The women might accompany their husbands on their fighting expeditions, as with the Carib Islanders, to provide victuals for them, and look to their vessels while they were engaged with the enemy, etc. (sec. 761). Old Arawak on the Pomeroon have informed me that it was customary for the woman to accompany her husband on his hunting and fishing excursions up to the birth of her first baby.

787. Occasionally the "path" may be so broken that recourse is had to bush-rope ladders, as is mentioned by Schomburgk on the sandstone terraces at the head of the Wenamu River, a branch of the Cuyuni (SR, II, 347). On the upper Mazaruni, Brown thus describes how he and his party got over the great escarpment of Merumé Mountain: We commenced to descend among great sandstone rocks, and over slippery tree roots, until we came to a perpendicular wall of rock, where a rude ladder of poles, with its rounds lashed to it by bush ropes, had been made by Indians, down which we had to make our way. We passed down two of these ladders and descended about 1,000 feet, when, late in the afternoon, we came to a camping place at the foot of an overhanging precipice, where some slight shelter could be obtained for the night (BB, 398).

788. Passage over swampy ground can be facilitated by leaves or spars. "On our return," says Brett, "the Indians made a path for us across the swamp with a layer of large truli leaves, which was perfectly safe" (Br, 159). Crévaux also talks of being prevented from sinking into the mud by walking on a spathe or palm of ouapou, which is very abundant on swamp lands (Cr, 194). Otherwise, the commonest method of crossing a mire is by means of spars laid on the surface.



FIG. 334.—An Indian bridge with hand rail on the upper Rupununi River.

789. It has been noted that an Indian never bends his back to pass under a tree that bars the way. He prefers to climb over the obstruction [or to walk around it]. This is because the rotten timber harbors a variety of insects, especially ants, which would fall upon him at the slightest shake (Cr, 194).

790. There seems to be a uniform method of climbing trees throughout the Guianas. St. Clair, talking of the Corentyn Arawak, says that the quickness with which an Indian youth can climb the highest of the coconut trees is quite astonishing. He first ties his feet together with some coarse grass and, placing them against the tree, resting on the grass, by passing hand over hand and bringing his feet up after him like a man swimming, he soon gains the top . . . and descends in the same manner, his hands and feet having been the only parts which touched the tree (StC, I, 344). On the Parou River, Cayenne, the native similarly slips his feet (*passee les pieds*) in a strap (*lien*) made of palm leaves and climbs with the swiftness of a monkey. He always makes the descent with the strap which

prevents him slipping (Cr, 298). So, again, tree climbing by means of a vine rope in the shape of a ring in which the feet are inserted is recorded from the upper Rio Negro (KG, II, 259) and Amazon (HWB, 275).

791. Streams may be either waded, swum, or crossed by bridges. To avoid danger from alligators on the upper Essequibo, the Indians cut long sticks and examined closely the side of the creek for half a mile above and below the place where it was to be crossed, and as soon as the boldest had swum over, he did the same on the other side, and then all followed (W, 82). Sometimes a tree of suitable height growing on the bank of the stream may be cut down so as to fall across the water and afford a passageway. This may be supplemented and strengthened with handrail and props (fig. 334). Occasionally a bridge may be specially constructed, as that above the cataract of the great Raudal de Guaharibos, on the upper Orinoco, where the Indians built one of bush rope supported on rocks that rise in the middle of the river (AVH, II, 461).

[For superstitions regarding Indians traveling alone or losing their way, see WER, VI, secs. 109, 130, 286.] Among other imaginary dangers to which the traveler is exposed are the Akami (Warracaba) "Tiger," the "Tiger" man, the Hairy man, the Milk-white Jaguar, the monster Bat, and troops of hobgoblins armed with short bows and arrows (PEN, I, 124). The source of danger is occasionally tricked by the traveler having a special *nom de voyage* (sec. 881).

CHAPTER XXX

TRAVEL BY BOATS, RAFTS, ETC.

"Dugouts": Canoes, corials, falcas (792); manufacture (793); materials (794); cover and fittings (795); calking (796); sails (797).

"Wood-skins" (798).

Paddles, poles (799).

Hauling over logs (800); over falls, rapids (801).

Rafts (802).

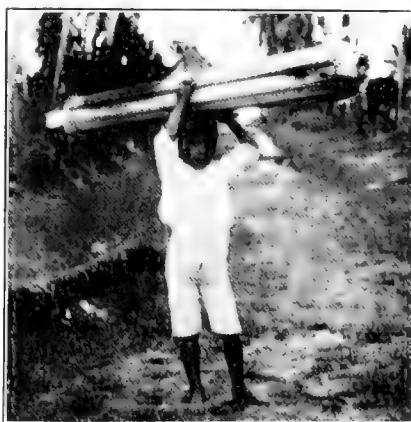
Taboos when traveling (802 A).

792. The various craft used in the navigation of the creeks, rivers, and coast line of the Guianas, together with the adjacent sea, may be shortly described as dugouts, wood-skins, and rafts.

The dugout is a narrow kind of boat made from a single trunk of a tree. In the language of the island Carib, the larger of these boats were called canaoas or canoas, the Spaniards speaking of them as piraguas (G, II, 116; Cr, 203), the latter term being long retained by the English for this kind of Indian boats as the pirogue. The same islanders spoke of the smaller boats as couliala (RO, 579), whence the corial of our own colony. The old Creole word in Cayenne was couillara (PBA, 128). In the same way that we speak of the native Indians as bucks and buckeens (names given them originally by the Dutch), we often hear their dugouts described as "buck shells." The present-day corial (pl. 177 D) is pointed at both stem and stern, variations in width, depth, and angle of the slope being observable in different areas. On occasion, bow and stern are almost indistinguishable, but according to Barrère's illustration from Cayenne (PBA, 28) a couple of centuries ago, the stern was markedly rounded (pl. 178 C). The term canoe (pl. 178 A, B) in our own colony is mostly employed to denote the larger craft, which are without the pointed head and stern, the gaps being filled with more or less triangular timbers (warakapá, Makusi), on the outer sides of which various fantastic devices used formerly to be painted. In addition to the patterns painted on the bow and stern, e. g., sun, moon, diamond (BrB, 39), the whole of the canoe might be besmeared with annatto (St, I, 400). Such canoes have been met from one extreme of the Guianas to the other; from the Mitoua on the Guaviar River of the upper Orinoco (Cr, 508) to the Carib of the Antilles. Gumilla records also how, in the windy season, to prevent

the waves from breaking over the vessel, they fix up a washboard running from stem to stern (G, II, 113-115). At the present day the washboard may be attached as a permanent fixture, both to corial and canoe, when the vessel, on the Moruca and Pomeroon, will be spoken of as a *falca*, the Spanish term for a wooden wedge, etc. The Arawak term for a *falca* is *arosutáhu*; the Makusi is *sumáripa*.

793. It is the same Mission Father who has left us an interesting account of the manufacture of one of these Orinoco dugouts. Having felled the tree with [fire and] stone axes and lopped it to a convenient size at the cost of much time and labor (sec. 4), the Indians start a fire along the top, leaving a thickness of but three fingers' breadth on either side, and, so, gradually burn out the wood until they attain a similar thickness at the bottom. Filling this concave hollow trunk with water they start a gentle fire with dry palm leaves on the outside and it is well worth the sight to see how the water within and the fire without combine to widen the hollow and open out the sides. While this process is going on the Indians fix strong sticks and beams across to help in widening out the sides and when once opened out to prevent them closing up again. At the spot corresponding to where the mast for the sail will ultimately be they double the crossbeams, making them extra strong. This done, they scatter the fire and extinguish the flames on so much of the outer surface as has caught alight. They then spend much labor for many days in scraping off the charcoal, both outside and in, until the whole vessel gets a luster-like jet. It must be remembered that this charcoal on the outer surface is a great protection in that it prevents the water from damaging or rotting the timber (G, II, 117). But there are other ways of forcing the sides apart and giving them their proper shape, which, once secured, is retained by strong hardwood crosspieces. Thus, the corial may be supported on trestles at either end over a fire till the action of the heat alone spreads the sides, as with the Arawak and Warrau, where spent its leaf—i. e., after removal of its outer fiber for string manufacture—is employed as the fuel; or it may be soaked for a few days in water before being submitted to the flames, as is the case with the Makusi and Patamona. I have not been able to confirm the statement (IT, 293) that sometimes it is filled with wet sand, the weight of which eventually forces the sides, softened by moisture, outward. Probably the particular procedure is dependent upon the condition and material of the craft. On the other hand, it would seem that occasionally, as with the corials, on the Ireng River, they were not spread amidships at all. The measurements of one such vessel, simply a long log of wood, hollowed out and rounded at both ends, were as follows: Length, 33 feet; width, 1 foot 9 inches; depth, 1 foot 2 inches (BB,

*A**C**B**D***WOODSKIN AND DUGOUTS**

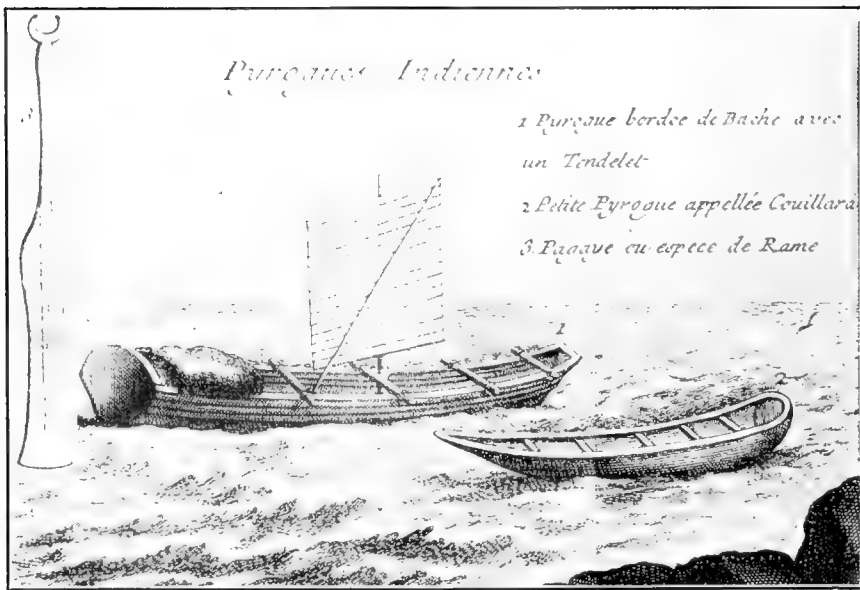
A, Akawai woodskin from the Mazaruni River. *B*, Canoe with split palm sail, Moruca River.
C, The sail rolled up for transport. *D*, Corials, Moruca River. (Photographs by J. B. Biezer.)



A



B



C

DUGOUTS

A, B, Makusi canoes. Rupununi River. C, Boats from Cayenne two centuries ago. (After Barrère.)

282). As to the canoe, in order to prevent the sides from opening too much, the open ends are firmly tied before being subjected to the heat of the flames. Otherwise its manufacture is identical with that of a corial.

794. The following are some of the timbers from which corials and canoes are manufactured:

Nectandra spp. The brown and yellow silverbally or siruaballi (Arawak), the former being considered the best available, and does not sink. Other local terms are determa, tataroma, etc.

Cedrela odorata Linn. Brown cedar, tenyari or mara (Arawak). One of the canoes employed by Schomburgk during an expedition to the interior was 42 feet long and $5\frac{1}{2}$ feet wide. It was hollowed out of a single trunk of this tree (CC, 31).

Copaifera pubiflora Benth. Purpleheart. Sinks when swamped.

Dimorphandra mora Benth. (*Mora excelsa*). Sinks.

Goupia glabra Aubl. Kabukalli (Arawak). Sinks.

Vochysia tetraphylla Aubl. Iteballi. The wood is not durable when exposed to the weather, but is soft and easily worked (CC, 36).

Bombax ceiba and *B. globosum*. Silk-cotton tree. Not durable. Some of the largest canoes are made from this tree. Schomburgk speaks of them holding 70 to 80 people, as well as two 3-pounders, when employed in the Venezuelan revolutionary war. Used by Warrau on the Waini (SR, 1, 144).

Carapa guianensis. Crab wood. It has the same objections as the preceding.

Protium (Icica) guianense March. Incense tree. Easy to work, but only of medium quality. Apalaï Indians of the Parou River (Cr, 304).

Protium (Icica) altissima. Wapishana (SR, 11, 362).

I only know of the following by their native names:

Anni. A fine tall tree with a prickly nut, of which Indians on the Cuyuni make their corials (ScE, 167).

Korohura or *kurohara* (Arawak). Sinks.

Tatábo (Arawak). Sinks.

Bisi. A gigantic tree. Used for constructing corials and canoes. It yields a resin of a greenish color which is used by the Indians to give a gloss to their bows, etc. (ScD, 35). *Bisee* craft are mentioned by Hilhouse (HiB, 328).

795. If the canoe is to be used for long journeys a tent is added for protection, not of the Indians themselves, but of their goods. A number of sticks are bent into semicircles and the two ends are fastened, one against each side of the canoe, so as to make a framework for the tent. These are held in place by cross sticks tied on at right angles, and on the framework thus made a thatch of palm leaves is

laid. Schomburgk mentions such a tent made of truli from the upper Moruca (SR, 1, 149). Sometimes, especially in the interior, instead of the thatch thus described, two thin wickerwork mats, each large enough to cover the whole frame of the tent, are made. A layer of leaves (*Ischnosiphon*) having been placed between them, the two are fastened, one over the other, and one mat thus produced, which is perfectly waterproof and can be laid onto the framework of the tent or taken off in a few minutes. This latter method of making tent covers seems to have been learned from the Brazilian Indians, and it is rarely seen far from the borderland (IT, 295). On the Orinoco Gumilla speaks of the addition of hatches at bow and stern, and then continues as follows: And the wonder is that, throughout a piragua you will not find a nail. Even the googings and screw pins with which the rudder [presumably the steering paddle] is turned from side to side are also of wood. You will not find an ounce of oakum, pitch or tar used in the calking of the hatches or the washboards (G, II, 113-115).

796. How, then, did these Orinoco Indians manage to calk their boats? is a question which is thus answered by the same authority. They take a quantity of bark from a tree which, like the mangrove, grows in and near the water on the river banks and seashore, and pound it well until there results a sticky mass held together by the many fibers contained in it. With this pulp they close tightly all the openings and seams of the piragua. It sticks fast and so stops the water entering (G, II, 113-115). The tree whose bark was thus utilized was probably the mora. [Acuña has the following to say of the Amazon Indians when they were first visited by the whites: They have pitch and tar as good as are to be found in Europe, and they have oil either to render it firm and solid or to temper its hardness, one sort of which they draw from fish and another sort they get from trees. They make a sort of tow, which they call ambira, so good that no better can be used for the calking of vessels and to make musket match (AC, 76).] The Boni blacks of the Maroni River, Cayenne, use the sapwood, previously bruised with a club, of the *Bertholletia excelsa*, the "Brazil nut," for calking. By way of tar they impregnate this oakum with a hard blackish substance called manil [*Moronobea*] (Cr, 44).

797. Square lug sails (pls. 177 B, C; 178 C) could be carried with these corials, as is the case at the present day on the Wakapoa Creek (between the Moruca and Pomeroon Rivers). Such sails are made of thin laths split from the leaf stalk of the mauritia palm, attached with fiber cord somewhat after the style of the cheap variety of split bamboo window blind (pl. 177 C), and like it can be rolled up for transport purposes (pl. 177 B). This sail was also used in Surinam

(AK, 74) and Cayenne (PBA, 28). When put to use it is slung by a rope, attached to the center of the topmost lath, over the forked extremity of the mast, to the base of which it is lashed. At the same time, the ends of the lowest lath are tied by cords to the gunwale or bench, and thus by loosening the one and tightening the other, the wind can be caught either on the port or starboard side. Barrère's illustration (sec. 792) represents a single cord attached to the extremity of the highest lath. When time or inclination is not available for the manufacture of such a sail a good substitute is often to be seen with a leaf of the kokerit palm. The Carib Islanders had sails made of cotton or of a kind of mat of palm leaves (RO, 527). [On the Amazons their cotton abundantly furnished the Indians with stuff to make sails of (AC, 76).]

798. The Arawak and Akawai of the upper part of the river [Berbice] generally use wood-skins instead of corials. They are made of a single piece of the tough bark of the murianara or purple-

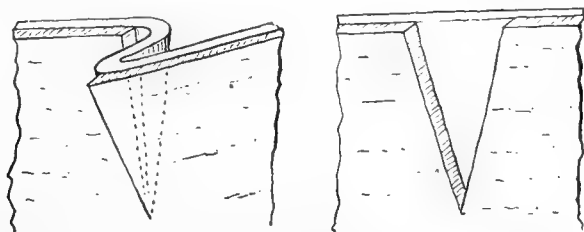


FIG. 335.—Manufacture of a wood-skin. Diagram to show the wedge removed from the outer layer of bark only, and the edges overlapped to raise bow or stern.

heart tree, which grows to a very large size. An incision is made to the extent required in the bark, which is removed by driving in wedges. When loosened from the wood it is kept open by cross-sticks (ScA, 308). From each of the two long sides of this, between 2 and 3 feet from either end, a wedge-shaped piece, the base of which corresponds with the free edge of the bark, is cut away from the outer layer of the bark, but leaving intact the corresponding inner layer, which is subsequently folded up on itself, and so prevents all ingress of water (fig. 335). The two ends of the whole strip of bark—that is to say, the short piece between each end and the nearest wedge-shaped incisions—are raised until the edges of the wedge-shaped slits meet; and these edges are then [overlapped and] sewn together with bush rope. This, therefore, raises the bow and stern at an angle from the water, while the body of the craft floats parallel to the water line (IT, 296). It remains for several days, supported at the extremities by two beams, exposed to the weather before it is fit for use. The boat now finished, they cut a few pieces of the ite palm and force them in as seats (Da, 211). It is in

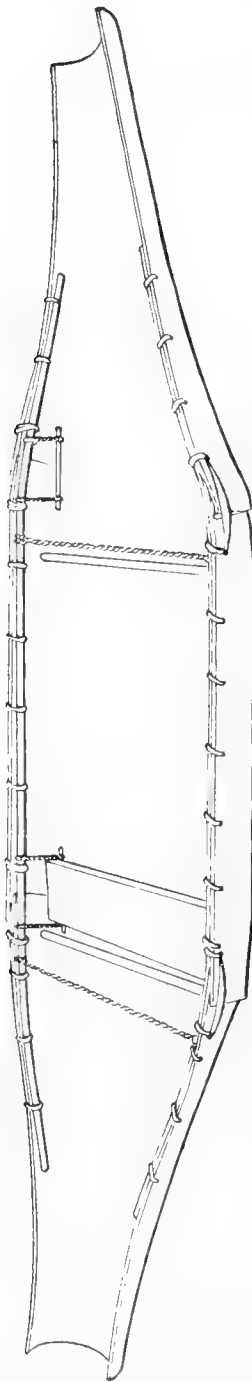


FIG. 336.—Diagram of a Carib wood-skin from the upper Barama River.

this, its simplest form, that the wood-skin may be met with on the Mazaruni (Akawai) (pl. 177 A), Rupununi (Makusi) (pl. 179 A, B) and elsewhere. Carib, Arekuna (Br, 267), Patamona, and others, who likewise make it of purpleheart, may strengthen the vessel by means of a rod sewn along inside the edge of the gunwale (fig. 336). In such a craft, which will be kept to shape with properly placed fiber-ties and timber-spreaders, the seats will be kept in place in supports hung from the rod. Wood-skins may also be made from mararen (SR, II, 472), and on the Demerara (Da, 211), Cuyuni (BB, 20-21), Corentyn (GO, 4), Parou, etc., from the simiri. In connection with the last-mentioned place of manufacture, Crévaux says that the bark only detaches itself if a fire is lighted around it when one commences the removal (Cr, 313). The Warrau make their "bark or shell canoes" from the bark of the bullet tree and makaratalli (ScB, 184), while on the upper Barama the Carib may fashion theirs from baramalli. Let it be remembered, however, that unless made of purpleheart the wood-skin will in every other case curl up in a few weeks' time and prove useless. When a wood-skin gets split, Carib will jam into the cracks shavings from the inner bark (bast) of the mora, which swells up with the water.

Though the wood-skin is so "crank" that the slightest motion, when once seated, renders it liable to be upset, Schomburgk mentions having frequently seen three men and their baggage in one. Their great advantage is that, being flat, they can float where a common corial of the smallest description can not pass (pl. 179 A, B), and so light that, in crossing cataracts, one man can easily carry his boat on his head. When propelled by one man he squats in the mid-



A



B



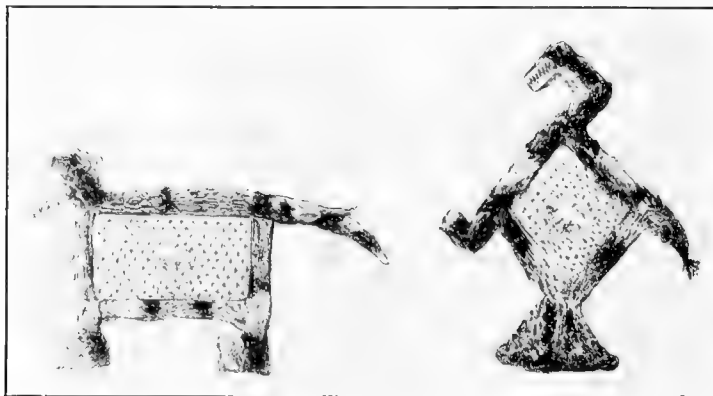
C

WOODSKINS; ASCENDING THE RAPIDS

A, B, Wood-skin on the Rupununi. Side and front views. C, Ascending the rapids. (After Koch-Grünberg.)



A, Raft on Oyapock River. Cayenne. (After Crévaux.)



B, Frames for the wasp and ant ordeals at the Maraké marriage ceremony.

RAFT; WASP FRAMES

dle and paddles on either side. . . . If upset, they sink almost instantly, owing to the great specific gravity of the bark (ScA, 308). Dance gives the following dimensions of one of the smallest woodskins he had seen on the Demerara: length, 14 feet; breadth, 10 inches; tapering toward the extremities, which were 3 inches wide, and greatest depth 4 inches (Da, 197). On the other hand, at the head of the Barama, Schomburgk reported that they are generally from 25 to 30 feet long, and when laden seldom draw more than 3 inches of water (ScB, 188). The name of pakasse is applied by Schomburgk to a wood-skin (ScK, 92).

799. As to their paddles, those made from the fluted projections of the yaruru, *Aspidospermum excelsum*, are considered the best

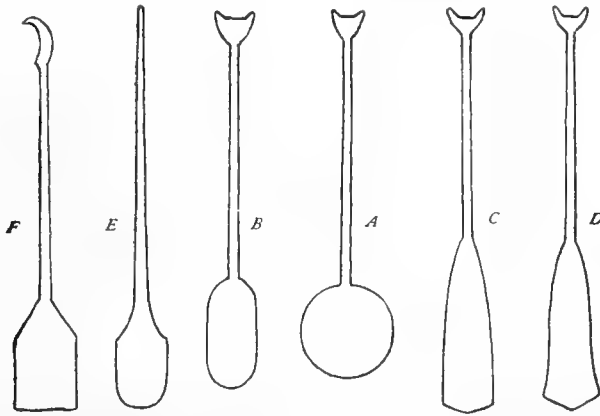


FIG. 337.—Types of paddle blade. A, Circular; B, intermediate; C–F, foliate.

(Br, 32). Indeed, this timber is known as paddle-wood tree (Da, 211). Schomburgk had frequently seen the Indians split one of the flutes off and finish a paddle in the course of a few hours, having no other tool but a cutlass and common knife. It was then handed to a woman, who painted it with roucou and laña (ScA, 329). Each paddle consists of a crossbar or crescentic handle, a shaft, and blade. The shaft may be squarish, but is very generally circular in section and occasionally is ornately carved. The blade (fig. 337) is either leaf-shaped, circular, or intermediate. The first-mentioned (C, D, E, F) is common to the central and eastern Guianas and shows slight, though perfectly recognizable, modifications throughout many of the tribes. The circular variety (A) is peculiar to the western areas, e. g., upper Orinoco, upper Rios Negro and Branco districts, e. g., among Maionkong (CC, 51), Patamona, Wapishana. The paddle met with around Mount Roraima among the Taurepang (Arekuna) is an intermediate form (B) used with the woodskins

when the creeks are in flood. In place of paddles, with very shallow water, poles are brought into requisition.

800. To drag a boat over a log lying across the surface of a stream the Indians will strip from the kara-kara (?Inga) trees pieces of bark, the inner surfaces of which contain a sort of viscous slime, place them with the slimy side up upon the log, and, like a sledge over the snow, the boat is easily drawn over (SR, II, 436). I have seen the Pomeroon Carib do this, and watched the Barama River Carib use the inner bark of the mora for a similar purpose. To navigate the Orinoco and tributary streams with better security when the weather threatens, the Indians make use of two canoes, a little distance apart, but joined by strong timbers fixed across stem, center, and stern (G, II, 117). "There is no such thing as shipwreck on the coast ever heard of," says Stedman. "If swamped, etc., the occupants jump overboard, where with one hand they hang onto the canoe, and with the other, and a calabash, they bail out the water" (St, I, 400).

801. In the absence of a portage, over which the emptied boat can be dragged along or behind the river bank, the manner in which the rapids or falls, when too strong to paddle up, can be ascended, is thus described by Hilhouse. The rapids do not fall in one sheet over a level edge, but force themselves through a number of fissures, large intermediate blocks of granite dividing the different shoots of the fall. At the base of these blocks there is an eddy into which the canoe is forced, where she becomes stationary, having no current either way. The crew now spring upon the rock and wade up as far as they can find footing (pl. 179 C). By means of a long and stout rope they then pull the canoe or corial into one of the shoots of the fall, where there is water enough to float it, and by main strength haul it up the ascent. They then take it out of the current and lay its stern against the top of the rock, from whose bottom they have just mounted, with its head right up the stream; and at a given signal they spring into it, and pulling with all their might, endeavor to cross diagonally the different currents until they get into another eddy. This is the time of the greatest danger in ascending. If they are not active in seizing their paddles, the head of the canoe is taken by the current, and it drifts broadside down the fall, where it must be infallibly upset (HiA, 28). In a similar way, on streaking a fall, the boat is sent stern first, with a rope attached to its bows.

802. Gumilla, speaking of the Orinoco, says that as compared with the "bridges" used by the Indians the rafts (*balsas*) are still the most dangerous means of crossing a stream. These rafts are the method most generally employed, because they only require some pieces of timber, bamboo, or bundles of reeds lashed together. Although half submerged, they cross the rivers with them (G, II, 120).

Humboldt, in describing the rafts of the Guahibos, of the same river, has the following: Scarcely 3 feet broad and 12 feet long, they carry only two or three Indians, but 15 or 16 of these rafts are fastened to each other with stems of the paullinia, dolicos, and other creeping plants. It is difficult to conceive how these small craft remain tied together in passing the rapids (AVH, II, 231). Crévaux describes and figures a raft (pl. 180 A) from the Oyapock River, Cayenne (Cr, 169).

802 A. To insure immunity from shipwreck, drowning, or other accidents, certain taboos have to be rigidly respected. The Arawak and Warrau will never wash a pot-spoon outside of the traveling boat either in river or at sea. Both these tribes, as well as the Carib, likewise have to paraphrase certain words, of which I have published several examples elsewhere (WER, VI, secs. 193, 194). Any breach of such regulation would offend the spirits of the water and incite them to harm the voyager. [Compare the custom of changing various names at nighttime in sec. 881.]

CHAPTER XXXI

SALUTATIONS

Notice given of approach to settlement (803).

Special house for strangers (804).

Procedures of the visitors on arrival (805).

Procedures of the people visited: Signs and gestures (806); other expressions of friendship and welcome (807-808); painting and anointing (809); distribution of drink, food, and tobacco (810); ceremonial of their distribution, male servitors (811); apparent indifference of the host (812).

Interchange of credentials occasionally, welcoming speech, etc. (813); comfort of the visitors assured, women, etc. (814); on departure, gifts, speeches, etc., may be exchanged (815).

803. On the near approach to a house or settlement the visitors invariably announce their coming by some distinctive noise or sound. As old Carib and Arawak have explained to me, were such notice not given, the visitors might get shot as an enemy on emerging from the bush into the open space around the dwelling. As will be gauged from the following such signals (which might at other times convey a meaning other than that of near propinquity) were produced in various ways. Before approaching the house it is customary for the Pomeroon Carib to knock two or three times with a paddle on a tree buttress. This is often accompanied by a whistle produced by means of the back of the little finger placed in the mouth. A tree of enormous size had fallen near the spot [Akawinni Creek, Pomeroon] and lay with a part of its roots elevated several feet from the ground. An Indian [Arawak] climbed upon it, and standing high above our heads, with a heavy piece of wood struck one of the broad fluted projections of the trunk, . . . which gave a loud ringing sound that echoed through the forest and across the swamp (Br, 115). Similarly, the foot of each successive visitor may be kicked backward to strike against the stump of a hollow tree (JO). Our approach to a village was always announced by some of our Indians [Wapishana] playing a sort of tune on their bone flutes, and our entry into it by their shoutings . . . The Makusi acted differently. They entered the houses noisily, giving three stamps on the ground, and uttering in a deep tone of voice the sounds, "Too-too-too-hah-hah-hah" (BB, 158). [In Cayenne] toward evening our principal guide [a Nourague ?] gave a signal with a sort of pipe that may be heard at a great distance (GB, 23). Clay and bamboo

trumpets, etc., were made to serve a similar purpose. The assertion has been made of men giving notice of their coming by loudly uttering the cry peculiar to their tribe, for each tribe has a distinct cry (IT, 321). What is probably intended, however, is that each gang of newcomers raised a shout in the far distance to let its nationality be known; e. g., the Arawak shouted "Lokono!" the Carib "Kalinia!" (PEN, I, 168). With the advance of civilization, and the introduction of firearms, cutlasses, etc., the nature of the signal has become correspondingly modified. Thus Indians give notice to their neighbors of a desired gathering, or of the arrival of friends, by reports of firearms, strokes of a stick upon an upturned corial, or on a suspended cutlass, notes sounded on a prepared cowhorn, or on a large chank shell (Da, 56). When hunters return after several days' absence . . . to their settlement or detached home, a shot or series of shots is fired, according to the number of huntsmen, to signify a safe return. Then another series of shots to invite friends, if plenty of game, but otherwise a silence follows (Da, 253).

804. In the large majority of cases there is a special house built for the reception of strangers (sec. 312). This was also true for the island Indians (sec. 327). On the Orinoco all the caciques generally had near their own house another one open to the four winds and covered only with straw or palm for the reception of strangers (G, I, 309). The Parikuta build very fine reception houses (JO).

805. As to whether the actual greeting is initiated by host or guest will depend in large measure upon the rank and status, social relationship (i. e., friend, family, stranger), or business of the latter. Thus in cases of intertribal importance upon the arrival of a person of presumably superior qualifications—e. g., a European, a more powerful chief, or upon the reception of invited visitors to a feast, etc.—the procedure will be opened by the host. If the Indians [in Cayenne] go on an embassy hardly will they have arrived at the appointed place but the chief will either himself come down to the landing stage or send a representative with all the youth to receive him (PBA, 186). Gumilla speaks of the visited cacique, on the Orinoco, coming to meet him (G, I, 309). Among the Wapishana, Schomburgk says that the men all came forward and greeted us (ScG, 245); that as he reached our tent the chieftain commenced his greeting ceremony (SR, II, 73). The Taruma chief will also come out and give welcome to one (JO). The Parikuta, when they welcome you, come up armed (JO). Our Indians [Wapishana], as Brown records, after announcing, on their bone flutes, their approach to a village would then enter the principal house and sit down in a circle. The chief man of the place would rise from his hammock, walk up behind one and tap him on the shoulder, muttering a few

words of salutation, which was responded to. He then passed on to the next, and solemnly went the round of the circle, holding a slight conversation with each, standing up behind the back of the man with whom he spoke. That being over, he retired to his hammock and another man of the place went the round in the same manner (BB, 158). On the Waini an Arawak chief sent word beforehand to the Warrau chief that he was coming to pay him a visit. Upon arrival and without taking notice of anyone he went and picked a hut, instructed the villagers to empty it, ordered his hammock to be put up (after clearing out everything that was there), and without another word laid himself in it and received his visitors sitting. His men similarly turned the owners out of their homes (SR, I, 149). On the Orinoco the missionary, with his companions, proceeds straight to the stranger's house, slings his hammock to the timbers specially fixed for the purpose, and rests himself without any Indians putting in an appearance, either because they are being painted or because they are giving their guests an opportunity for resting themselves (G, I, 309). Schomburgk is responsible for the statement that if the new arrival comes to accept an invitation to a feast, etc., the visitor is addressed first (SR, I, 361). On the other hand the visitor, who alone does the verbal greeting, may be received without being addressed at all, as with the Atorai, where the host, preserving strict silence, lies enveloped in his hammock (Cou, II, 309).

On the Orinoco strangers visiting a settlement for the first time would upon entering carry their weapons under their arms and execute other ceremonies which they practice in sign of friendship (G, I, 307). In Cayenne Crévaux mentions how on entering an Apaläi village—a custom he did not find among the Ouayana—they brought him a framework of palm leaves to which were attached at their centers some big black ants. All the people of the tribe, irrespective of age or sex, presented themselves for him to apply it to their bodies, loins, thighs, etc. (Cr, 300). Unfortunately there is but little else recorded of the salutation ceremonies so far as they were practiced by the visitors.

806. On the other hand, particulars are forthcoming of the ceremonies observed by the hosts. These consisted of special hand gestures, of verbal expressions of welcome, of painting and anointing the visitor, of gifts of hospitality, and, on special occasions, the official exchange of credentials. On the mainland there are many references to special hand gestures. Thus, among the Makusi, passing the open hand here and there over the visitor and then stretching out the hand (SR, I, 416). The men [Wapishana on Rupununi] all came forward and greeted us in a manner similar to the Makusi, namely, waving the hand before our face (ScG, 245). So also the

chieftain [Wapishana on Takutu] commenced his greeting ceremony, as is usually the case, by waving the open hand up and down three times close to our face without touching it (SR, II, 73). Here we found two huts with 50 inhabitants, chiefly young females. They consisted of Guinau and a few Maiongkong. Young and old came forward waving their hands, and apparently rejoicing to see us among them (ScF, 224). His [the bishop's] salute was returned by Kanaimapo, the principal chief . . . who came to the front of his people [Akawai above the Demerara Falls] and, standing on the edge of the bank, placed both hands on his breast and then waved them in token of welcome (Br, 334). There were only 12 or 13 altogether, men, women, and children [Akawai village, Mazaruni]. As they arrived they touched our hands and then retired to a short distance (BW, 168). Schomburgk was welcomed among the Arekuna, not only by men, but by women, from the oldest to the youngest, after the headman had finished his welcome speech, with a handshake, the first occasion on which he had been thus greeted by the fair sex (SR, II, 234). The tapping of the visitor on the back of the shoulder by the host (BB, 158) has already been referred to. This gesturing of the hand by the person visited may perhaps be a remnant of the custom of painting and anointing the stranger, a practice to be discussed in section 809.

807. On the islands the reception by the Carib of European strangers visiting them as friends—e. g., French and Dutch—was of a somewhat more demonstrative nature. After they [the hosts] have shouted to them that they are welcome, some cast themselves into the water and swim to them, enter into their vessel, and when they come near land proffer to carry them ashore on their backs as an assurance of their affection. In the meantime the captain himself, or his lieutenant, expects them on the shore, and receives them in the name of the whole island. Thence they are conducted by a considerable number of them to the carbet, . . . where the inhabitants of the island, everyone according to the age and sex of the newcomers, bid them welcome. The old man compliments and makes much of the old man, the young man and maid do the like toward those of their age, and a man may read in their countenances how much they are satisfied. But the first discourse they make to the stranger is to ask him his name and then to tell him theirs. And for an expression of great affection and inviolable friendship they call themselves by the names of those whom they entertain. But to crown the ceremony they will have the person whom they receive in like manner to assume their name. [NOTE.—See WER, VI, sec. 265.] Then they make an exchange of names; and they have such excellent memories that 10 years after such a meeting they will

remember the names of their friends and relate some circumstance of what had passed at the former interview; and if they were presented with anything they will be sure to call it to mind, and if the thing be still in being they will show it to him who had bestowed it on them (RO, 513-514).

808. On the mainland, with regard to the verbal expressions of welcome, this varies from the simple "Have you come?" and "I am come," uttered in this or reverse order by visited or visitor, as the circumstances above detailed require, to the complicated official harangue which, learned as a child, is rattled off by rote. Thus, as De Goeje reports from Surinam, when a man comes home of an afternoon . . . the wife says, "Have you come?" to which the man almost laconically replies, "I am come," whereupon the wife sets food before him. . . . One has described similar greetings among the Kalirya, Arawak, Makusi, Guanero, and Tamanac (GO, 24). An Akawai and Arawak meeting is mentioned by Schomburgk, where the same expressions are employed (SR, I, 205). Gumilla reports the use of practically identical phrases from the Orinoco, question and answer being repeated in turn by each member of the party (G, I, 309). Among the Makusi, if one visits another's place in ordinary intercourse, visitor and visited engage in a similar curt colloquy, "I am come," etc. But if it is to a feast, etc., the visitor is addressed first, and if there are more than one the same formula is repeated to each, according to rank and age. When the strangers have all entered, the housemistress places a stool, and the owner will decry it, but the guest must praise it up. When the cassava and pepper pot is handed round, the same thing happens—the host's disparagement and the guest's praise (SR, I, 361). With the present-day Arawak of the Pomeroon the same procedure is followed. Standing outside, the visitor addresses the housemaster, who will be lying in his hammock. If he knows the latter's name, or is already friends with him, he will call him by name; otherwise, he will address him as bilibebe (if older than himself, bili=my) or bili-satchi (if younger), as a sign of alleged respect, and say, "I am come." The housemaster, after giving him a "Have you come?" will next ask him where he comes from, his business, etc., and then call to the women folk to bring food. If the visitor be accompanied by a female, she will slip around to where the women are and the same performance will be gone through with the housemistress. If the latter is older the word of respect is hiallo; if younger, it is hiaro (i. e., girl) or hisa. Schomburgk gives a somewhat different account of the salutation which he experienced among the Arawak near Wieronie Creek: The chief of the settlement came forward and said three short sentences to him whom he considered the first

among my crew. Those sentences expressed in an increased ratio his welcome, and are literally translated, "Sit down," "Sit well down," "Sit very well down." [NOTE.—The interpreter must have been at fault here, such an expression being a literal impossibility. It is far more probable that what was actually said was something after the style of, "Sit down," "Rest yourself," "You must be weary" (JO).] The man thus addressed said to each sentence "Wang" [an Arawak expression corresponding to our "All right," "Right-O!" etc.]. He then went to the next guest and so in rotation until all had received his welcome. Then came his sons and all the men of the settlement, one by one, and repeated the same. The whole ceremony lasted upward of half an hour (ScA, 346). Among the Taruma, after the greeting of men by men, the women will greet the men (JO).

809. The painting and anointing of the visitor by the womenfolk would seem to have been a very widespread practice in the Guianas, both on the mainland and in the islands. On the Orinoco, no matter how many guests there may happen to come, the women anoint their feet on arrival (G, I, 123). If 12 or 20 strangers are present, the [Saliva] women [in addition to dressing, anointing, and painting their husband's hair] have to do it for them (G, I, 187-188). Before distrust and suspicion were introduced by the conduct of the Europeans among these innocent people [Arawak on the Corentyn] strangers on their arrival among them were surrounded by the women, who washed their feet and welcomed them with expressions of the greatest kindness (StC, I, 328). The painting of the visitor is likewise recorded from Cayenne (sec. 754). It is a law of hospitality among these tribes [in Venezuela] when a stranger arrives at their dwelling to cause the women to remove the paint from their bodies and apply it anew (FD, 56). Among the Island Carib a similar custom prevailed. Even a single Carib arriving at a hut is well received . . . and before leaving a woman will paint him with roucou, and also comb his hair (PBR, 245). If the visitors are tiptop folk, such as relatives, captains, etc., they [apparently men in this case] comb their hair on entering and quitting (RO, 516).

810. These preliminaries completed, there would be a distribution of drink, food, and tobacco. The hospitality of Akawai to strangers was proverbial, a circumstance which is said to have accounted for their provision fields being double the size of those of other tribes (SR, II, 454). In Barrère's experiences of Cayenne the tobacco would seem to have been supplied after the food. The other recorded accounts of cases apparently leave this matter of priority doubtful. Thus, in Cayenne, the repast ended, tobacco rolled in bark (i. e., cigars), is brought in. The chief lights two and offers

one to the headman of the visitors (PBA, 186). Among the Maiong-kong it is customary on the arrival of a stranger at their huts for several individuals to offer him their cigars after partly smoking them themselves (ScF, 237). The same with the Waiyamara. "After having heard what our guides had to say about us," writes Schomburgk, "the captain rolled up a few leaves of tobacco in kakaralli bark . . . in the form of a cigar, lighted it, and after smoking it for a little while, handed it over to me" (ScF, 219). And so among the Apaläi of French Guiana, each Indian prepares as many cigarettes as there are visitors and offers them after being lighted. Crévaux had to take some puffs at each of the long cigars which were successively offered him (Cr, 305). On the islands, on the reception of those of their own nation who are strangers to them, the visitor is presented with a stool and tobacco, and so they leave him for a time without speaking until he hath rested himself. . . . Then the cacique comes and asks him whether he be come? The other answering "Yes," he sits down by him and falls into discourse. Afterwards those of the common sort come asking him after the same manner, whether he be come? And having therefore brought him something to eat they also fall into discourse with him (RO, 514). On the mainland all the early travelers seem to have experienced lavish hospitality at the hands of the natives. Indeed, when a stranger enters the dwelling of an Indian he is sure of being entertained by him with the best at his command (Br, 347). [Speaking of the Arawak] the women, on arrival of the stranger, and particularly a European, prepare the pepper pot and bake a hot cake of cassava bread. A bowl of cassiri is produced . . . and the head of the family strives to forestall all his [visitor's] wants. The young men immediately leave their hammocks to hunt and fish. Every article of arms or furniture, except the toys of the children, is at his disposal, and he is absolutely oppressed with the kindness of his welcome (HiC, 230). "After the first ceremonies of reception [by the Maiongkong at Mount Maravaca] the women brought us," says Schomburgk, "divers fermented drinks, followed by a whole array of little pots filled with sauces, and a number of neatly plaited flat baskets containing each a fresh cake of cassava bread" (ScF, 237). Brown reports that on arriving at the Indian place near the Cotinga, called Weynamou, at dusk of that day, the women, as usual, placed pepper pot and cassava on a mat in front of the door of their houses for us (BB, 126). It is left to Gumilla, however, to give us comparatively complete details of this food-distribution portion of the salutation ceremony as between an Orinoco chieftain and a Mission Father. Presently the cacica and the captains' wives, without speaking a word, place each one near the Father . . . a

dipper of beer, a plate of meat, and bread that they use. The other women of the village do the same, with the result that almost the whole house [the stranger's house] is filled with dishes and vessels, and all the while not a remark, not a word, is heard. The drink in the dippers is white, mulberry tinted, or reddish, according to the fruit or grain from which it is made, and tends to cause disgust at first. The Father then asks one of his Indian companions for the dish which he fancies and eats what is necessary. But the astonishing part about the drinking—and this is where the conflict comes in—is that one has to drink, taste, or pretend to drink from out of all the dippers. Annoyance and resentment would only be caused to the woman who brought the dipper, and to her husband, if one were not to taste a little of it. It is, indeed, a troublesome business for the Father, but a very pleasant one for the Indians accompanying him, because so soon as he has tasted the last cup of beer they remove everything out of the house and eat and drink to their heart's content (G, 1, 309–310). Stools may be brought out for the greater comfort of the visitors (GO, 24; RO, 516). As in the islands, where the verbal expression of welcome followed, and not preceded, that of hospitality, so among the Trio Indians of Surinam first came the food and then the welcome. Thus the visitors squatted down at the entrance of the Trio village. The villagers took no notice of their presence, but certain of the women placed in the middle of the settlement two fans with cakes on them. The visitors (the men) betook themselves in solemn gait to this spot and halted there. One after another took a piece of cassava, and when the last had taken what was left they all returned to the limit of the settlement. Then for the first time came the young men of the village to greet them (GO, 24–25). With the Trio of our own colony another traveler has noticed what may almost be considered a reverse condition of affairs—i. e., first the welcome and then the food (JO).

811. There are one or two other noteworthy facts in connection with this ceremonial drink and food distribution that require mention. Thus both on the mainland (sec. 279) and in the islands it was not always the women who took such a prominent share in the proceedings. A man may thus be specially deputed by the head of each village to announce the visitors and to supply food for them (PBA, 186). Among the Roucouyenne of the upper Yary, the hosts did not take any part in the dancing of the visitors, but only exerted themselves in giving warmth to the proceedings by filling them with drink and by flute playing. The women lie in their hammocks while their husbands are doing the honors of the feast (Cr, 104). With the Parikuta it is the chief himself who hands round the drinks (JO). With

the Island Carib, for strangers of their own nation, there is in each carbet an Indian (male) whose business it is to receive the travelers and who is called *nioüakaiti*. If these are common folk he gives them seats and what there is to eat, but especially a cassava cake folded in two, which signifies that they must eat what they can but leave the rest. But if the visitors are tiptop people, such as relatives, captains, etc., they comb their hair on their coming, and on their going away they hang up beds and invite them to rest themselves. They also present them with *matoutous*, which are little tables made of rushes or the leaves of palms (sec. 332) . . . on which they set the cassava not folded, but as they come off the plank. The women set them at their feet, and the men standing about show that which was brought, saying, "Behold thy meat!" Afterwards the women bring in gourds full of *ouïcou* and make them drink. Then, having set them on the ground before them, the husband, who stands behind the women, says, "Behold thy drink!" And the others make answer to these two compliments, "Very well." The cassava unfolded signifies, "Eat thy fill and carry away the rest"; which they fail not to do. When they have dined well without being interrupted by anyone, they all come to salute them one after the other, saying to him, "Be welcome!" But the women are not much concerned in this ceremony (RO, 516-517; see also PBR, 245). On the mainland the strict etiquette is for the visitor to finish the cassava cake that is offered, or, if he can not do this, to take it away with him. Then, in certain of the tribes there may follow the wrestling matches (secs. 607, 608) and the whipping bouts (sec. 840).

812. Whatever interest may so far have been displayed by the headman, chieftain, etc., toward his visitors would seem to vary with the opinion he holds of their relative importance and the nature of their business. In the cases above alluded to the interest shown has been a more or less active one, but there are many instances recorded where it is decidedly much to the contrary. "The captain [Arawaks at Hittia village, Berbice] receives us," says Dance, "sitting in his hammock" (Da, 32). The [Wayamara] captain received Schomburgk sitting on a low stool surrounded by his men, all armed with war clubs (ScF, 219). A Warrau chief greeted him after the same style (SR, 1, 184). "The chieftain of the place [Makusi settlement, Ossotshuni Mountains], whose name we understood was Tuma-Tuma, awaited our arrival," says the last-mentioned traveler, "with great indifference, in his hammock . . . While our guides made him acquainted with the object of our journey, he only gave his *ahem!* without betraying the slightest interest in us or those who were with us. The females, however, did not constrain their curiosity in such a determined manner. . . . They

soon became acquainted with the Indian women in our train, and, inviting them into their huts, no doubt, received as much information as they desired" (ScT, 59). So, also, in another instance, they [Wapishana] looked with great curiosity at the different objects which we had brought with us, while their chieftain remained placidly sitting at the entrance of my tent, and received the reports of what the others saw remarkable among my luggage. It appeared to be below his dignity to go and look himself (ScT, 54). This apparent indifference, no doubt strict etiquette on the part of the Indian, was carried to almost an extreme among the Trio. [Although the visitors had been fed by the women and greeted by the young men] the headman, Langu, did not trouble himself about them the whole day long. It was only the next morning that the visitors might converse with him. . . . On a similar friendly visit paid to Majoli's village, here again it was only the next day that Majoli first spoke to his guests (GO, 24-25). This apparent indifference has not been the experience of another traveler who has visited some half dozen Trio villages in our own colony (JO).

813. It evidently depends upon the chieftain's opinion of his visitors' worth and the object of their coming whether the official exchange of credentials, to be next described, is initiated by him as an address of welcome or responded to by him as an address in reply. If the visitor is his superior, the former is the case; if inferior, the latter. The following is the account of a welcome, recorded by Gumilla, as extended by an Orinoco chieftain to the visiting Mission Father. After the missionary has returned to his hammock the cacique gets up and, approaching near, commences his address (*arenga*) which they call mirray. This they learn when little children, and so recite it without a hitch, adding by way of prologue or epilogue certain circumstances suitable to the welcome; e. g., that the day before he had seen a bird with peculiar feathers and colors passing over his house; or that he had dreamed that his lands, sown with seed, were very dry and that the rain had fallen just in the nick of time. That all this served to give them notice of the Father's advent. The substance of the address consists of the various accidents and incidents that befell their ancestors, and they relate it all in a sad tone, ending up the majority of the statements (*clasulas*) with some expression peculiar to each nation. With the Achagua this consists of two words, twice repeated in a very high key, "Yaqueta, nude yaqueta!" which means to say, "It is true, my friend, it is true!" His speech finished, he goes back to where he was seated . . . It is the business then of the missionary to have his say, etc. (G, I, 311). From Cayenne, Barrère records the opening speech of welcome, made in this instance by the visitor to the

person visited. Stretched in his hammock while his host is seated near, the leading man of the visiting party commences his harangue, which is always very lengthy. He commences with a lot of preliminaries which sometimes have nothing whatever to do with what he is going to say. He is spokesman for the whole tribe. He lays bare the object of their visit—a long-winded discourse of which the pronunciation is quite different from that of their ordinary language. They speak with extraordinary rapidity and great volubility. They employ various conjunctions not used in everyday conversation. They affect a twang and keep the last syllables so long sustained that one might almost say they were talking in a language foreign to their own—our French people call this manner of speaking *karbéter*. Now comes the turn of the chief visited, who replies after the same style. He enunciates with all seriousness and in a shrill voice (*d'un ton ferme*) after the style of a man reciting. Often they do not care to listen to one another. There are some who will speak for half an hour at a time without stopping a moment. During all this the person ostensibly addressed amuses himself as he pleases, and will even talk in a low voice with those close around without in any way giving offence to the person haranguing, knowing full well that he will do exactly the same when his turn comes to make a speech. The ludicrous part of the business is that if the stranger happens to belong to a different linguistic stock each will “karbete” in his own language for hours at a stretch, the one not understanding a word of the other. “For my own part,” writes Barrère, “I believe that they do this to make themselves conspicuous and so inspire respect from the younger men” (PBA, 189–190). Coudreau reports similar procedures among the Taruma—the peculiarities of speech, intonation, intermediate phrases simultaneously vociferated by both parties, and the introduction of subject matter apparently totally foreign to the business at issue. Indeed, he suggests its explanation as the survival of an old-time custom—an encounter between two savage warriors (Cou, II, 353). Among the Wapishana, Schomburgk mentions that when their chief had finished his address of welcome the oldest men then commenced theirs (SR, II, 384). In the present-day Parikuta welcoming speech the host will introduce something about hoping that his visitor has not brought any evil spirits with him (JO).

814. Once the salutation ceremony is over the visitors are well looked after and food supplied them, both for their stay and their return journey. [In Surinam] no pay is given for this, but if there should be a woman among the guests the preparation of the cassava is left to her. When visitors stay a few days at a village they occupy themselves with hunting and fishing, and now and then will make

various little things, plait fans, etc., for their hosts (GO, 24-25). On the other hand, Hilhouse would seem to have believed that payment was at all events expected on these occasions, because when speaking of the oppressive hospitality with which a host would entertain his stranger guest, he says that this is exceedingly inconvenient in the sequel because all offers of kindness are supposed to be reciprocal (HiC, 230). Though there is no distribution of gifts made by the visitors, the latter will in turn be "squeezed" (sec. 818) when the time comes for those who are now the hosts to pay their return visit (JO). With regard to other bodily comforts, women would often be supplied for the bachelor visitors (App, II, 272, 273). Even dear old Father Gumilla must have been tempted with some tribute of affection and hospitality of this nature. He relates how, finally, it is usual for the Indians to offer the Father a woman to assist and attend to him, but with much modesty, and blushing without wishing to, he tells them that all his love is centered in heaven (G, I, 311). It should be remembered, however, that the offering of the woman is to show the visitor that he will be welcome should he wish to remain with them permanently as a member of the tribe, rather than as an indication of their desire to supply him with the means of satisfying his temporary physical wants (JO).

815. On the visitors finally taking their departure, with food supplied for their journey, a similar exchange of credentials, speechifying, etc., may take place (PBA, 190). In Cayenne it would seem to have been customary for the visitors, on their departure after a three or four days' drinking bout, to leave their wooden flutes behind them, to be transported, together with the accompanying dances, to other areas (PBA, 203). The island Carib visitors said good-by to everyone in particular, which they expressed by the word "huichan" in their language (RO, 517). The present-day Pomeroon River Arawak, Warrau, and Carib—just like the Creole Negro and Portuguese here—acts in an exactly similar manner. He simply says, "I go," or "I gone," and he goes.

CHAPTER XXXII

TRADE AND BARTER

No interest in the accumulation of property (S16).

Value of article dependent upon its want, not its worth (S17).

Ignorance of presents (S18); no medium of exchange and consequently often no business done (S19).

Trust and credit (S20).

Trade may be direct, indirect, or through agencies (S21).

Advertising, "shouting," etc. (S22).

Trading expeditions and trade routes (S23).

Each nation usually has its own home products (S24-S28).

Note on the Dutch-Indian trade (S29).

S16. In his description of the Arawak on the Berbice, Pinckard states what is equally applicable to the Guiana Indians in general: They have no interest in the accumulation of property, and therefore do not labor to obtain wealth. They live under the most perfect equality, and hence are not impelled to industry by that spirit of emulation which, in society, leads to great and unwearied exertion. Content with their simple means, they evince no desire to emulate the habits or the occupations of the colonists; but, on the contrary, seem to regard their toils and customs with a sense of pity or contempt (Pnk, I, 519). But this perfect equality does not necessarily imply a state of socialism; far from it. They have not a community of goods, individual property being distinctly marked between them. But this property is so simple and so easily acquired that they are perpetually borrowing and lending without the least care about payment (HiC, 231).

S17. In trade and barter the value of an article to an Indian depends upon his temporary want of it and not upon its intrinsic worth (SR, II, 393). Thus, the Santo Domingo natives bartered their gold . . . for tags, nails, broken pieces of darning needles, beads, pins, laces, and broken saucers and dishes (DAC, 452). An Indian at one time shall require an ax, in exchange for that for which at another he will demand only a fishhook, without regarding any disproportion between their value (BA, 335). For what one Indian [Warrau] would want a gun or an ax, another, for the same thing, would want a couple of fishhooks, some beads, or a comb (SR, I, 175). One Makusi woman offered me a cow for two "flash" finger

rings, of a value under 16 cents, whereas at Samarang, on the Brazilian side of the border, I had to part with my trousers for two hind quarters of fresh beef.

818. Crévaux was the first to draw attention to the ignorance of the aborigines with regard to the custom of presents: "When I give a knife," he says, "they always ask me 'What do you want?'" (Cr, 262, 404). The converse is equally true; e. g., if the Uaupes Indians show one hospitality in the way of cassava, smoked fish, etc., they expect something in exchange, and often show themselves very exacting in this respect (Cou, II, 171). At the Patamona village of Kari-kaparu the chief's brother upon seeing me walk in lame and weak on arrival gave me a long hardwood stick to help support myself. I accepted it and asked him how much, but he refused to take anything, saying it was a present for me. About a week later, when opening my "trade," he saw some knickknack that took his fancy; he asked me for this, reminding me of his previous present to me of the stick.

819. In the absence of a medium of exchange an Indian has nothing to sell unless the buyer happens to be in possession of what he wants. Thus among the Uaupes River Indians when we first arrived, writes Wallace, almost the whole body of the inhabitants came to visit us, requesting to see what we had brought to sell. Accordingly we spread out our whole stock of fishhooks, knives, etc. . . . which they handled and admired in unintelligible languages for about two hours. It is necessary to make this exposition in every village, as they will bring nothing to sell unless they first know that you have what they want in exchange (ARW, 207).

820. But cases often arise where the article of traffic is of such a nature as not to lend itself to exchange, or, rather, where the article required in exchange is not immediately forthcoming, and under such circumstances no inconsiderable amount of trust and confidence is necessarily imposed upon both parties to the transaction. In the purchase of corials and canoes, their [Arawak] most expensive articles, the buyer is frequently credited to what we should call a ridiculous extent, especially as the means seldom exists of enforcing payment (HiC, 231). The Boni [bush Negroes] who come and do business in the Roucouyenne country are obliged to pay for hammocks which will not be handed over to them until the following summer (Cr, 262).

821. When buyer and seller are not in immediate touch the intermediary may be direct or indirect. The Atorai obtain their graters from the Taruma not only for their own use but to sell again to the Indians of the Takutu (Cou, II, 308). The Arawak sometimes under-

take long voyages to the remote Warrau villages to buy the canoes, which they in turn will sell to the settlers (Br, 165). In Surinam many bush Negroes have among the Indians their "matti" (=mate, friend). Such a matti acts principally the part of a trade agent and commercial traveler. When a bush Negro comes to an Indian settlement it is the matti's chief business to see that he is well treated and looked after.

822. The Indian knights of the road do not hesitate to puff and advertise their wares to the best advantage on lines similar to those employed by their more civilized brethren. Thus, in the well-established trade and barter carried on between the Saluma [Taruma] and Trio, the former tell the latter that the glass beads which they are selling them grow on bushes which they themselves plant (GO, 26). In Surinam, de Goeje states that when making a purchase the buyer will put some turalla, a vegetable talisman, between his lips to prevent the seller overreaching him. I have elsewhere (WER, VI, sec. 233) discussed the subject of such charms. It is possible that procedures somewhat on these lines have led up to the trade ceremonials, etc., traces of which are still extant. Thus, Hilhouse writes as follows of the Warrau: "I bought several of these [bisee tree] craft in the Iterite, where a depot of them had been collected. . . But the bargaining, except as an instance of national manners, was sufficiently tedious. First came a multiplicity of questions, then a jorum of beer made of the fermented fruit of the ite—acid, astringent, and a red oil floating on top—this being returned by a glass of rum, the trading treaty was concluded . . . one of which [craft] I bought for four axes. This, however, I found was only the basis of the bargain—a cutlass, a knife, paper of hooks, scissors, needles, pins, a razor, beads, and five yards of salempores being understood as all included in the term four axes. This was a mere feeler. As soon as the old chief or captain saw the complexion of my wares, and that I bled freely, five or six other craft gradually made their appearance, which I bought reasonably enough, and then was proclaimed a general dance (HiB, 328).

823. The length of journey and time spent on the trading expeditions often proved to be formidable enough, occupying, as it did, from months sometimes to a year or more. From their settlement on the Cunucunuma, a tributary of the upper Orinoco, the Maiong-kong followed the Orinoco to the Cassaquiare, then the Rio Negro, then up through the mouth of the Rio Branco to Fort San Joachim, and so through the Takutu and Mahu to Pirara, about 1,000 miles in three months, partly by land and partly by water (SR, I, 402). The migratory movements of the Akawai were all conducted with profound forethought and according to a regular system. . . There

are certain friendly villages where these roving traders are sure of getting cassava bread on their long journeys. Their expeditions sometimes occupy months, sometimes years (BrA, 198). They have been called, from their roving propensities, the peddlers and news carriers of the northeast coast; and are in constant communication with the inhabitants of Venezuela and the Brazils as well as with the colonists of Demerara, Surinam, and Cayenne (Br, 143). Of course, it is somewhat difficult now to estimate how far these lengthy expeditions were limited by the huckstering or by the fighting which usually accompanied them. Certain it is in some cases that the organized system of traffic has opened up new trade routes in the strict sense of the word. Thus, near Waru, at the head of the Quitaro River, there is a path which leads to the Taruma Indian country on the upper Essequibo which was made by those Indians who used to come from these parts to barter with the Wapishana.

824. Each tribe had its own home products, whether manufactured or in the rough—in the latter case anything from dogs to timbers—and, in a sense, each had a reputation for the articles it was especially accustomed to barter. For example: The Otomac women were noted for their clay pots (G, 1, 170); the Arekuna for their cotton and blowpipe; the Makusi for their curare poison; the Maiongkong (SR, 1, 402) and Taruma (BB, 248) for both cassava graters and hunting dogs; the Warrau for their corials; the Waiwai for their fiber (Cou, 11, 379) of tucum and kuraua; the Guinau for their hammocks, cassava graters, aprons, girdles of human hair, and feather decorations (ScO, 453); the Oyapock River natives for their "spleene and mateate" stones (LC, 313). Nothing came amiss, a market being always forthcoming sooner or later for everything—even for dried turtle with its preserved eggs and extracted oil (FD, 53); slaves, dried fish, hammocks, and green stones (PBA, 75), smoked and salted fish (HiC, 239), sandstone for sharpening knives (SR, 1, 210), even bark shirts (SR, 1, 402). In spite of the statement made (IT, 271) of the Akawai alone having no special products interchangeable, there is evidence of their bartering the kishee-kishee bird (Br, 181), which seems to have commanded a high price, a sort of arrow-root (BB, 19), and the roots of the hai-ari (*Lonchocarpus*) for fish poisoning (BA, 106), articles which do not appear in the commercial stock lists recorded of the other nations. As a matter of fact, the hai-ari root continued to be bartered by them to the coast tribes for quite a century later (Br, 143).

825. Curare constituted a very important article of trade throughout the western Guianas. Gumilla mentions how the Caberre, the only nation on the Orinoco who, he says, manufactured it, derived a rich income from all the others who bought it from them either

directly or through a third party (G, II, 125). Indians of various nations on the lower Orinoco proceeded to the annual market (*feria*) for curare and returned with the little clay pots more carefully guarded than the most precious balsams, etc. (G, II, 133). Now, although the Orinoco and Rio Negro Indians prepared the article, caravans nevertheless were wont to come from both of these places all the way to the Canuku Mountains to trade with the Makusi for the superior article made by them (SR, I, 445-447). The Arekuna secured their supplies from the Makusi in exchange for finished blow-pipes or even for the pure reeds of the *Arundinaria schomburgkii*, which they in turn got from the Maionkong (SR, II, 239). On the upper Amazon the curare was obtained only from the Indians who lived beyond the cataracts of the rivers flowing from the north, especially the Rio Negro and Yapura (HWB, 296).

826. The stone-chip cassava graters of the Uaupes River Indians were also articles of trade in all the upper Amazon, as they were cheaper than the copper graters used in other parts of Brazil (ARW, 336). Those of the Rupununi River Makusi were brought into Surinam by Carib in the way of barter (AK, 281). I had learned from the Wapishana, who obtain their graters from the Taruma, that the Makusi received theirs in trade from the Arekuna. The Makusi confirmed this statement, adding that the usual price was at least a flask of gunpowder, but generally very much more. I was, consequently, a good deal surprised to learn from the Arekuna (or rather the Taulipang branch of them) that they do not make these articles themselves, but trade them from the Maionkong. It is this same tribe who are at the present time carrying on a brisk trade in graters from the Orinoco to the upper Rio Branco (EU, 291).

827. The trade in good hunting dogs was likewise a well-established one. The Waika [Akawai] often make long journeys in order to trade and barter with the Colombian and Brazilian tribes for their breeding dogs (SR, I, 198). Similar practices are reported from the eastern Guianas, where the Boni (bush Negroes of the Maroni River) annually travel more than 250 miles (*cent lieues*) to obtain good dogs from the Carib of the Ytany and Yary Rivers (Cr, 49). Barrère also speaks of hunting dogs constituting an article of trade between the Indians and French of Cayenne (PBA, 154).

828. The pottery trade appears also to have been all-important—traces of it are still to be found between the Arawak and Carib—but few, if any, reliable particulars have been handed down to us with regard to the routes followed and the commodities exchanged; e. g., Otomac women manufactured clay pots for their own purposes as well as for trade use (G, I, 170).

829. In the early days the following particulars of the articles usually bartered to the Dutch by the Akawai have been noted: Balsam capivi [*Copaifera officinalis*], a balsam called Arrecocerra [*Protium aracouchili*], hai-ari roots, oil of Caraba [*Carapa guianensis* . . . different kinds of curious woods, letter wood [*Brosimum*], ducolla-bolla [? Dukalli-balli], ebony, likewise vanilla, annatto [*Bixa orellana*], *Cassia fistularis*, *Canella alba*, wild nutmeg, wild cinnamon, monkeys, parrots, parroquets, etc. In return, the Dutch gave them India salempores with which they cover their nudity, hatchets, knives, fishhooks, combs, and small looking-glasses, together with beads of red coral on which they put an immoderate value, and glass beads of different colors (BA, 263, 269). Attention had already been drawn to the letter-wood by Harcourt, who wrote: "There is also a red speckled wood in that Countrie called Pira timinere, which is worth thirtie or fortie pounds a Tun. It is excellent for Joyner's work" (HR, 385). Silk grass (*Bromelia*), the pero of the old Spaniards and flax of the English (JW, 349-350), seems likewise to have been an important article of commerce in the early days, if only to judge by what Leigh says of it: "At my arrivall here I found a Dutch shippe, and sithence here have arrived another; they buye up all the Flaxe they can get, and pay so deere that I can get none; yet they have not gotten so little I thinke as ten tunnes of Flaxe within these two months" (LC, 320). In more modern times the bladder of the gilbagre (*Practocephalus*) has been and is still a not insignificant article of British Guiana and Surinam trade (App, II, 126).

CHAPTER XXXIII

DEATH AND MOURNING

Daily lamentation of the dead (830).

Signs of mourning (831).

Burial: Site, purpose, nature (832); posture of the corpse (833); property buried or destroyed (834).

Cremation (835); urn burial (836); mummification (837).

Final destination of deceased's bones or ashes (838).

Final burial festivities: Disposal of surviving partner (839); whip and its variations (840).

Mortuary customs of the different nations: Arawak (841); the Makuari dance, for males (842); the name (843); whistles (844); whips (845); other objects (846); the Hau-yari dance, for females (847). Arawak stock, Atorai, Tariana (848). Warrau (849); Otómac (850); Saliva (851); Saliva stock—Piaroa, Ature (852). Guahiba and Chiricoa (853); Betoya (854); Jirara, Ayrica (855). Carib, on Orinoco (856); Demerara (857); Surinam (858); Cayenne (859); and in the islands (860). Carib stock, Akawai (861); Galibi (862); Makusi (male) (863); (female) (864); Oyana (865); Oyampi (866); Palicour (867).

830. There was a more or less prevalent custom among Guiana Indians—e. g., Otómac—of bewailing the dead the first thing in the morning, as a matter of daily routine (G, I, 167). [This daily lamentation of the dead is not unknown in other parts of South America; e. g., Nordenskiöld describes similar practices in the early morning among Indians of the Gran Chaco (NOR, 109, 179).] In other cases the lamentation was limited to the period intervening between death and final mortuary festivities, the varying expressions of sorrow depending upon the kinship and friendly relationship of the survivors. These expressions took the form of an address to, or questioning of, the deceased, even to the extreme point of shouting into the corpse's ears certain eulogies, all more or less in a chant or wail, and ending with intoxication. "These occasions," says Bancroft, "presented a ludicrous spectacle of crying, singing, riot, and drunkenness; the old women being particularly noisy and petulant, and distinguishing themselves by singing loud songs in praise of the person deceased" (BA, 316).

831. Among the most characteristic of the signs of mourning was the disuse of all ornaments and the cutting of the hair. When death removes any of their blood relations they [Arawak women of the Berbice and Demerara] drop their knickknacks and for a short while

go about quite naked—this being the way of mourning over the departed. The old dames adorn themselves no more, and likewise do not worry even about covering their shame, going at once naked with long dependent breasts swaying in front of their body. Many would find it difficult to imagine that in times of mourning the eyes should really be allowed to roam elsewhere, but it is indeed the case (BER, 21). Hair cutting was practiced by Arawak, Warrau, Saliva, Makusi, Oyana, and Island Carib; among Arawak only at the final festivities, e. g., the Makuari and Hauyari. The hair so removed was buried with the deceased Oyana, but as to the hair plugged into the ears and mouth of the dead Makusi there is not sufficient evidence to show whether this came from the deceased or the survivors. The coloration of the body in varying degrees, according to the kinship of the mourner, was customary among certain of the tribes, red (annatto) being employed for the purpose by Carib, Makusi, and Guahibo; blue or black (probably genipa) by the Jirara (G, I, 201). Certain foods are forbidden and various works—e. g., the cutting of large timbers—restricted. If the deceased be married, the surviving partner repels all offers of marriage until such time as the burial ceremonies are concluded. In many cases—e. g., Akawai, Carib, Oyana—the hut, the fields, and, on certain occasions, the whole village where death took place, might be deserted. Let death have taken place among the more influential members of the settlement and every individual will leave his hut. The fields may be ripe for crop or may just have been planted—nothing can conquer the fear that their further abode at that spot is displeasing to Kanaima, the arch enemy of the human race (ScG, 282). An Indian may, however, be left in charge to watch the crop (ScO, 69).

832. The site for the burial of the dead was either the deceased's own house or its neighborhood, though special localities, e. g., general cemeteries, were not unknown. Thus Arawak, Guahibo, Saliva, Carib, Akawai, Makusi, etc., all buried their dead in their huts. Among the Uaupes River Indians some of the large houses have more than 100 graves in them, but when the houses are small and very full the graves are made outside (ARW, 346). In one cemetery of the Piaroa, Humboldt reports having seen nearly 600 well-preserved skeletons (sec. 852). The graves of Makusi medicine men are dug, not in the nearest convenient spot but on a special hill of somewhat peculiar shape and well wooded, which stands isolated on the savanna in front of the northern face of the Canuku Mountains. The Makusi of the village of Carenacru, on the Rupununi savanna, have a special place for burying their dead, but this seems quite an exceptional instance (IT, 224). Carowob is a hill on the upper Pomeroun, noted as the burial place of the ancient Carib

chiefs of the Pomeroon (Br, 125). When one of their companions dies on the road, Carib, Makusi, and Akawai erect a palm-leaf thatched shed over the burial mound to prevent the body being damaged by the bad weather (ScO, 137). From the very general custom of exhumation and the uses to which the bones were generally subsequently put it is very probable that burial of the body was not regarded in the same light as it is by more civilized people, a convenient method for its final disposal, but rather as a means toward an end, namely, the cleaning and preservation of the bones. All the main Indian nations—Carib, Otomac, Betoya, Saliva, and very probably Arawak previous to contact with European influences (sec. 841)—practiced exhumation, the evidence for the Makusi alone (and these are a Carib stock) not being forthcoming. Warrau attained the same object by leaving the body for some time in water to be exposed to the ravages of flesh-eating fish. It is therefore a matter of but little surprise that earth burial varied from an excavation or pit covered with earth to a shallow grave uncovered (Piaroa) or to a surface burial in a corial, etc. (Warrau), supported on forked sticks, the place of sepulture in both the latter circumstances being protected with a palm leaf or other shelter; i. e., a special house for the dead. Even in cases of earth-covered graves, both among Arawak and Carib, notice should be drawn to the fact that direct contact of the body with the earth was prevented by means of sticks, hurdles, canoe benches, palm leaves, etc., which one may be inclined to regard as analogous to the palm-leaf shelter of the surface burials, a view to which confirmation is lent by the six posts temporarily surrounding the grave (G, 1, 184) dug within the deceased Saliva chieftain's hut. The place of sepulture was taboo, and the women who had been responsible for the cleansing, etc., of the corpse considered unclean.

833. The posture in which the corpse was placed for burial was either vertical or prone, reasons for which are forthcoming from the Akawai, or in a more or less sitting (described by many authors as the "foetal") position. The Oyana cremated their dead in the sitting position, the back being supported by a stake. The body was usually decorated and ornamented; sometimes washed, combed, and painted (e. g., Oyana, Island Carib).

834. The property of the deceased was either buried or destroyed by fire, such burial or destruction not being necessarily in the same grave as the corpse, or even contemporaneous with it. But, however disposed of, such property might include his corial, hammock, his weapons and domestic goods, his dog (Warrau), even his wife (Orinoco Carib), or slaves (Island Carib). In many cases he was supplied with food. Though thus provisioned and accompanied, as

if still in the flesh, for some journey, a hunting or fighting expedition, there were certain objects placed in the grave for a special purpose; e. g., a bow and arrows (Warrau), a knife (Akawai), or thongs (Makusi) for dealing with the murderer (human or spirit) who had done him to death both to kill him or to tie him, when caught, to a tree.

835. The Atorai (Arawak stock) and Oyana (Carib stock) cremated certain of their dead and buried the ashes, in the latter case a year after they had been collected in an earthen vase, and preserved in the widow's hut. Bodies or bones might be cremated after exhumation (sec. 838). Though the Betoya buried the deceased and burned his effects, the Island Carib either buried his property with the body or burned it over his grave. This might possibly provide a reason for the fire kept lighted for some days on top of the graves of Warrau, Makusi, Cayenne, and Island Carib. The signification of the mourners jumping over the fire at the Makusi (sec. 864) or Guahibo (sec. 853) burial is not, however, forthcoming. It may have something to do with the fact that to step over a live person when lying on the ground is to offer him a serious affront. The recumbent person would rightly say, "you can cross me when I am dead. I am not dead yet" (WER, VI, sec. 220).

836. Urn burial has been met in the extreme eastern and western Guianas as well as in southern British Guiana, the contents of such vessels being either ashes or bones, the latter sun dried, painted, or varnished. Some of these urns were of huge size, upward of 5 feet in height, and were buried either in natural caves or specially prepared pits, each leading to an excavated chamber (fig. 338). The latter have been recorded from the Counani, south of the River Oya-pock (GOL, pl. A). Tribes practicing urn burial were the Ature (sec. 852), Oyampi (sec. 866), and Oyana (sec. 865). With the Atorai (sec. 848), though the burial of the ashes in an urn is not specifically stated (SR, II, 388), the recent discovery of urn burial in the neighboring Makusi country (Philadelphia Mus. Journal, Vol. VI, No. 1, p. 53) makes it practically a certainty.

837. Mummification was practiced by the Piaroa (sec. 852) and by Oyana, but with the latter only on the medicine men (sec. 865).

838. After exhumation or other method of cleansing the bones—on occasion they were even painted—they were either preserved, distributed among friends, or burned. They were preserved in baskets suspended from the roofs, or else in earthen jars (sec. 852), but the true object or objects aimed at in their preservation is none too clear—whether for fear or respect, for propitiation, etc. Father Acuña's remark is very much to the point, when he says: "For some keep them [bones] in their own houses, that by having them always before

their eyes they may, as they pretend, on all occasions be put in mind of death. But certainly if they did it for this intention, one would think that they should keep the remains of their dead in better order than they do" (AC, 99). Other purposes to which dead men's bones were put are witchcraft and prophecy (WER, vi, sec. 78). Exhumed bones or bodies among some of the tribes were burned and the ashes, mixed with liquor, drunk, e. g., Arawak (Tariana), Saliva, Betoya, Island Carib. Wallace gives an unsatisfactory explanation of the practice by certain of the Uaupes River Indians in that they believe that thus the virtues of the deceased will be trans-

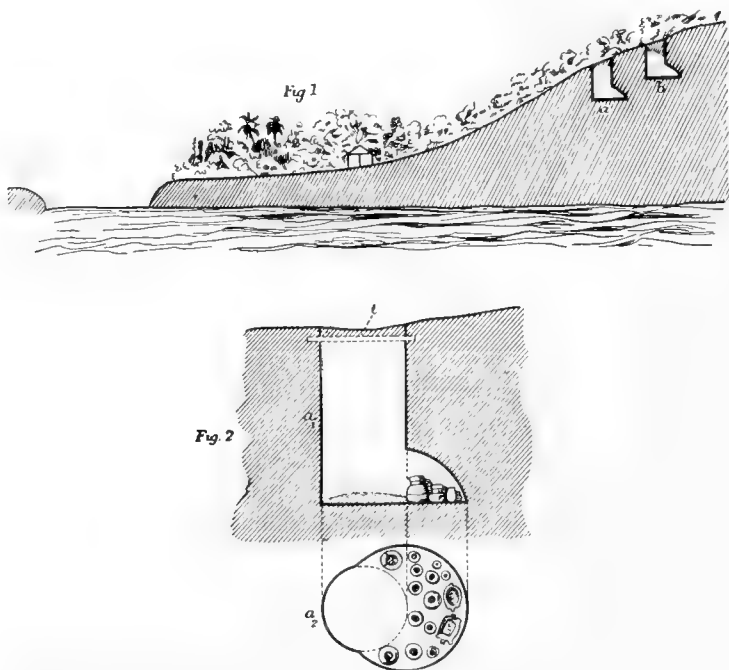


FIG. 338.—Pit with excavated chamber, showing urn burial. (After Goeldi.)

mitted to the drinkers (ARW, 346). Barrère's reason that such a mortuary custom is more honorable for the deceased than if they left his bones a prey to worms and corruption (PBA, 231) is equally untenable. As I have pointed out, among the North Queensland natives, so among the Guiana Indians, a warrior celebrated for his prowess would disdain the attributes of a female or of a youngster.

839. The final burial festivities, which close in the period of mourning, take place a "year" or "twelvemonth" after, or upon the "anniversary" of the death, but these intervals of time thus given by the various travelers are only empirical. As was originally pointed out by Schomburgk—a fact which I have been able to corroborate among Carib, Warrau, and Akawai—these final cere-

monies were enacted so soon as the cassava planted by the deceased, or after death on his behalf, was of a quantity sufficient to supply enough paiwarri for the visitors to be invited, and with newly planted cassava the time thus occupied would vary from 9 to 11 months (SR, II, 318). Though in these festivities song, dance, drunkenness, and venery ran riot, there were certain performances special to the occasion, among the most important of which was the emancipation or remarriage of the surviving partner and sometimes the employment of the whip. For instance, the widow was now disposed of according to the usages of the different tribes, e. g., she might be taken to wife by her late husband's brother or, on the other hand, her connection with his family might be henceforth severed (sec. 897).

840. With regard to the employment of the whip, this took the form of a mutual castigation in the Makuari dance of the Arawak (secs. 842, 843) and Warrau; of a cruel chastisement of the widow and her future husband among the Guahiba (sec. 853); of a harmless cracking in the air at the Pono dance of the Oyana, a Carib stock (sec. 865). As will be seen farther on, the Makuari whip had a more or less sacred character in that it was never allowed to touch the ground (sec. 844). Indeed, I am inclined to recognize in the thongs placed in the Makusi grave to give the deceased a chance of tying up his spirit slayer when caught (sec. 863) either an origin or a development of the whips above mentioned. Nay, I am prepared to go further and suggest that the stick-whacking game of the Toulé dance of the Oyana (sec. 865), the pliable osiers constituting the feathered dome in the burial dances of the Saliva (sec. 851), the Makusi thongs, the Makuari and other whips, e. g., the Dabucuri (Cou, II, 186) are all more or less intimately connected with the idea of driving or keeping away certain spirits, e. g., of the dead, much after the same manner as the magic whip of wolf skin of the Eskimo. As a matter of fact it was an Arawak piainman who emphatically assured the Penard brothers that the principal reason for the Makuari whip dance was to expel Yawahu, the Evil Spirit (PEN, I, 176). It seems to me reasonable also to suppose that the whipping of visitors as a salutation ceremony, e. g., among the Parikuta, may similarly bear relation to the spirits which the host, in his welcoming speech, trusts that the visitors have not brought with them (sec. 813).

841. The following are abridged accounts of the mortuary customs, written with more or less detail by travelers among the more important of the nations occupying the Guianas:

Arawak.—The Orinoco Arawak was buried with many ceremonies [unfortunately not detailed by Gumilla]. His weapons go with him

to the grave, and so that no earth should fall on top of him, a strong hurdle is fixed at about a hand's breadth above the body. Upon this are put many broad leaves, upon which the earth is finally trampled. The same practice is observed by the Achagua [Arawak stock], but only with their captains and chiefs, and with the peculiarity that the last layer to be put over the grave is one of clay or mud well trodden in. Every morning for a long time after they plaster up the crevices arising from the drying up of the clay. This is done not for the prevention of any bad smells but to stop the ants entering and worrying the deceased. Other nations have a contrary belief—that as soon as the body is buried the ants come and eat it. Indeed, to express their anger when much annoyed with any one they will say, "I hope to goodness that the ants may soon attack you" (G, I, 199-200). This same objection to the close contact of the body with Mother Earth was also noted by Crévaux among the Piapoco, another Arawak stock of the lower Guaviar. They bury the deceased in his hut, in a hole about 1.50 meters deep, where he is laid with his feathers and weapons. They place a canoe bench on his face and body to prevent their contact with the earth. Men are on the one side of the grave, women on the other, and all the chanting and wailing consists of two words, which, translated, mean "My brother has left me" (Cr, 526).

There is evidence that exhumation among the Guiana Arawak has been practiced up to comparatively recent times, not only in connection with the chieftains but also the common people. As to the latter we have Bancroft's authority for the following: After the body has lain in the earth for several months, and the flesh is supposed to be perfectly rotten, the grave is opened and the bones taken out and distributed among the relatives, on which occasion the same ludicrous scene of riot and sorrow is again reacted (BA, 316). The Tariana (an Arawak stock) of the Uaupes River practiced exhumation in Wallace's day (sec. 854). Although Gumilla makes mention of certain drunken revelries and their attendant decorations celebrated upon the anniversary of a cacique's or captain's death among the Caberre (Arawak stock) of the Orinoco (G, I, 124), no details are furnished. On the other hand, certain information is procurable relative to the Pomeroon and Berbice district Arawak, which, pieced together, forms a fairly complete account of the festivities, dances, and ceremonies taking place at shorter or longer intervals subsequent to the death and burial of the deceased. Of the dances, there were two, the Makuari and Hauyari, which would seem to have been originally restricted to the special occasion of a male and female, respectively.

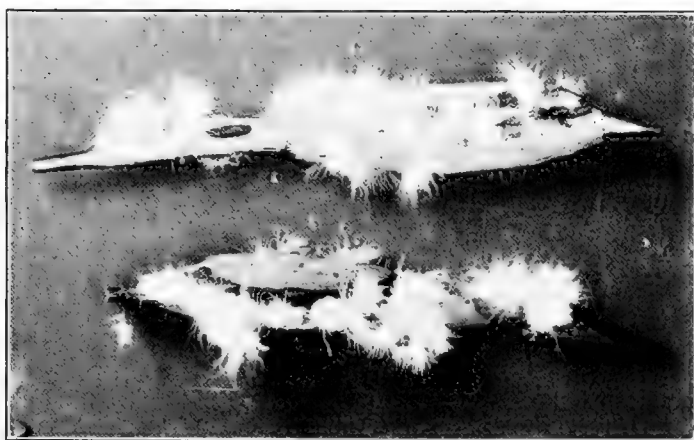
842. The first description of the Makuari ceremony is given by Van Berkel, who witnessed it some 250 years ago at a spot between the Demerara and Berbice. As I had to spend the night there, he says, my six Indians who were carrying my baggage came and asked permission to go in the meantime to a village called Abary. I asked my interpreter the reason; he gave me reply that at the said place, over three or four weeks before, there had died a captain whose bones, on account of his bravery, had been preserved according to custom and were now to be burnt. These little bones are of certain cut-off limbs; they are fingers, toes, etc., which, after the flesh has already been scraped off, are hung up for three or four weeks in the roof of the house to dry. This is the only part that is preserved so long, everything else which the deceased has left, such as ax, hatchet, knife, hoe, etc., being at the same time flung into the grave. Thus they imagine that he will have use for them on the journey. When, now, the said little bones have to be burnt, man and maid are bound to be present at the ceremony. My curiosity, which encouraged the interpreter to give me a minute description of the ceremony, impelled me to accompany them, and to see as an eyewitness what I could hardly believe from hearsay. My Indians immediately took up their positions in a file consisting of about 40 persons; and this was surrounded by another file, somewhat larger. Each one had in his hand something like a long whip, with which they struck one another, turn by turn, a terrible blow on the legs. The one to be beaten stands in the middle of the file, and having received his flogging steps into the room of the one who has given it to him. This takes place amidst a horrible shouting and yelling, as if they were challenging one another, saying to one "Baja wadili" (I am a man) and to another "Daibaja wadili" (I am also a man), and he who can not endure this whipping until the following morning is considered a coward and never dares come into any company. He who has a moment's time goes meanwhile for a drink, because there is such a quantity of liquor that it can not be consumed. During this valorous performance the wives have to accompany them with theirs, to wit, they utter dismal wails and lamentations, and exclaim in the midst of their sobbing and sighing, "Who is now going to plant bread, to hunt and fish, to catch crab, etc.," for the widow, their sister (since they call even the white people their brothers and sisters), at the same time that they put the little bones of the deceased into the fire, so as to be reduced to ashes, which the wives must take care of. Meanwhile the men greet one another with cuts of the whip just as determinedly outside the house by the light of many fires which serve them for torches (BER, 25-26). The next reliable account of

the Makuari is recorded by Schomburgk as met with among the Arawak of the upper Moruca at Asecota [the present-day Asakata]. He describes it as a peculiar death ceremony, also customary among the Muntrucus [? Mundurucus, of River Tapajos]—a bloody death dance in which are used plaited whips made out of *Bromelia karatas* [kuraua] fibers. After every death the dance is held, either in the course of several months or after a year. The dead person is, with the usual wailing, placed either in a hollowed-out tree trunk or a small corial and buried in the hut. The cassava field of the deceased must be no more used, but when the roots are ripened they are made into paiwarri. Friends and acquaintances in the neighborhood are invited with the knotted string, etc. On the day appointed all the men of the village stand in two rows armed with these whips, in front of the hut, and with all their strength lash the arriving visitors upon the calves. No cut must be made above or below. The incoming guest does not at all strive to avoid the blow, but stands in a challenging attitude with one leg in front of the other. The visitors so treated now join in the rows with the whippers and lash in their turn those of the guests who arrive later. In the meantime the calabash [with its liquor] does not rest. Now begins a general whipping among themselves—a horrid sight, wounds which often require weeks of rest in the hammock. After the whipping has lasted a while the participants range themselves in procession, in front of which are carried three figures—those of a crane and two human beings—and circle around the deceased's house in a long monotonous chant. The song ended, three men armed with knives forcibly seize the blood-trickling whips from their possessors and immediately cut them up. In the meantime a grave is dug outside the hut and the three figures, together with those of the deceased's utensils and weapons which are still to be found, are buried in it. With the closure of the grave all remembrance of the dead is at an end. With the possessors of large cassava fields these ceremonies will be repeated, because the deceased's cassava may only be utilized for paiwarri to be devoted to such a purpose. For such a repetition the whips will be carefully preserved and plaited in again with the new ones necessary and buried at the very last (SR, II, 458).

843. The name of the dance—mariquarri (Schomburgk), macuari (Dance), maquarri (Brett), macquarie (Im Thurn), etc.—is very probably connected with the Arawak morakúyuha, the white crane or stork, of which the general Amazon (Tupi) term is magoary (HWB, 32, 146, 316). The bird carried in procession (pl. 181 B), which Schomburgk describes as a crane, is possibly identical with the magoary in question. Im Thurn would seem to have described this magoary or morakúyuha as the honoré (Ti, Dec., 1889, p. 282), really



A, Makuari whips. (Georgetown Museum.)



B, The white crane, carried in procession during the Makuari funeral ceremony.

MAKUARI WHIPS AND WHISTLES

the hanurá (ScO, 309) a white crane, like the morakúyuha, but smaller. The dance, like many another, would thus appear to be an imitative one, but the exact relationship (if any) of this particular bird with a male death is now unknown. All that can safely be suggested is that the whip introduces the essentials which connect it with the passing of the dead, i. e., its power of driving away certain spirits (sec. 840). Brett, on the other hand, would derive the name of the dance from the whip (Br, 154). At the same time it has to be remembered that Van Berkel applies the term maquary to the torch used in putting the prisoners to death (sec. 771).

844. As to when the makuari was actually held depended on the quantity of cassava the deceased possessed at the time of death, from a few to many months. If he were the owner of plenty the dance was held at once; if not, some was purposely planted, the main idea being to have large quantities of drink available. The makuari (or hauryari) always began at a new moon and continued until full moon, before sunrise and at sunset, the men in a group in the center manufacturing the whips and singing all the time, while the women were preparing the paiwarri. Leaves were slung onto a rope stretched across two uprights in front of the house, but whether this was "taboo" I have been unable to discover (cf. sec. 737). The procedure at such a festival ceremony or dance commenced with two men keeping guard at the landing stage and notifying with their whistles those up at the house of the arrival of each new comer's corial. The whistles (sec. 567), manufactured of wood, represent the purukúri, a savanna bird, something like a plover, with a characteristic whistling note. The hosts and those already assembled would then rush down the pathway, the boys first, with the old men following, and arranging themselves in two rows, lash each visitor passing in between on his way up to the meeting place. The earlier the visitor arrived the better for him—less whips to be whipped with. But this was not all, for even when he did at last reach the house of burial he was asked how many calabashfuls of paiwarri he could drink, and according as he replied one, two, or three, so he was whipped once, twice, or thrice before he was allowed to imbibe. Brett expresses his surprise at the Indians' indifference to pain, which they told him was owing, in a great measure, to the paiwarri and the presence of the women, who sit by as spectators of their powers of endurance (Br, 158). A whip was never permitted to touch the ground, but should it by chance do so and the housemaster hear of it the whip would be considered to have been so grossly insulted as to force the host to engage two men specially to punish the delinquent. In this connection it is interesting to note that Brett talks of the whips being laid on a board placed for that purpose

(Br, 202). When all was over it seemed to be a point of etiquette not to resign the whips without a struggle, and while the one party were snatching and cutting the others were leaping and throwing somersaults to avoid them (Br, 154). Women would now join in the fray and beg the men for the remainders of the whips when being buried, and with these remnants would then fight among themselves.

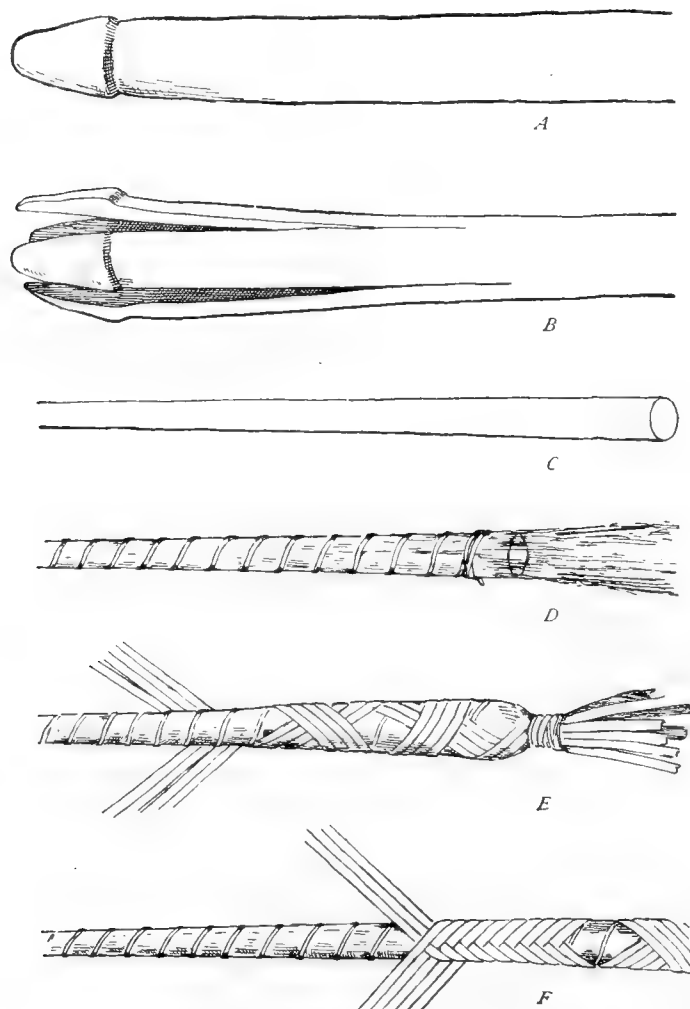


FIG. 339.—Manufacture of the makuari whip.

845. The manufacture of the now obsolete makuari whip (pl. 181A) was explained to me by an old Arawak, who showed me all the stages. It is made up of two parts—the handle and the thong. The former is built up on a stick tapering and grooved at its distal extremity (fig. 339 A), which is subsequently split down crosswise

(B). The thong consists of a central core of *mamuri* extending its whole length, cut and scraped by knife into the progressively attenuated shape required (C). A fair quantity of *kuraua* fiber is next laid parallel along the whole core and fixed in position by overcasting (D) with a waxed *kuraua* thread. A bundle of eight or ten *ite*-fiber strands are tied at its butt (E), half the bundle being crossed two or three times over it in one direction, the other half in the opposite. There thus result a series of strands on either side, which are now plaited. This is effected by passing the topmost one of one side in a spiral over the topmost one of the other, alternately, thus crossing one another both in front (F) and behind. These *ite* strands are kept in position by the waxing of the *kuraua* thread, which prevents any slipping, as well as by their subsequent tying, at intervals of a little over an inch, throughout their entire length. The thong is then jammed into the cross-split handle, which is next tied tightly around the groove already mentioned. These whips run from 4 to 5 feet in length.

846. Whereas Schomburgk mentions three figures—a crane and two humans—as heading the procession around the house of sepulture, Brett talks of four—two pieces of wood rudely carved to resemble birds and two others, which were intended to represent infants (Br, 154). I have obtained confirmation of the latter's statement, the two birds being the *morakuyuha* crane, already referred to (pl. 181 B). Im Thurn mentions yet another figure, that of a sloth (Ti, Dec. 1889, p. 282), but this is very probably only representative of a dance imitative of that animal, one of the many other imitative dances (humming bird, monkey, etc.) with which the *Makuari* (and *Hauyari*) are brought to a conclusion. It is during the course of the *Makuari* dance that, in the case of a male deceased, the widow gets her hair cut by her late husband's male relations and *paiwarri* poured over her head. She is then done with and returns to her own parents unless the elder or next brother wishes to take her to wife, but if not so claimed the connection of the wife's family with that of the deceased would be considered as terminated. A sort of incidental to the *makuari*, the relationship or symbolism of which is now lost—first and alone described by Im Thurn and since confirmed by elder present-day Indians—consists of a square board with sticks or "dolls." On the ground in the center of the dancing place lies a flat square board of perhaps 2 feet square. [Compare the plank drum of the *Oyana* and other tribes (sec. 581).] Two old women, or an old man and a woman, rarely two young persons, squat opposite to each other with this board between them. Each is provided with a rough wooden figure of a man, or sometimes in place

of this man each has a bundle of a few straight sticks from 2 to 3 feet long. Whichever instrument is used it is beaten by each player on the board to a sort of rough time, and with an accompaniment of rhythmic chanting. . . . The time beaters beat on, now faster, now slower, etc. (Ti, Dec. 1889, p. 291). Of course it is quite possible that Im Thurn's human may be identical with Brett's infant figures.

847. In addition to the White Crane or Makuari dance upon the death of a female, with similar ceremonies, there would now follow the "tiger bird" (*Tigrisoma* sp.) or Hauyari dance, which Brett saw at Koraia, Wakapoa. After an interval of rest 12 of the young men came forward to engage in another kind of dance called Owiarrri [Hauyari]. These performers carried rods about 12 feet in length, on the top of which were fixed small gourds with stones in them and decorated with streamers of silk grass, painted red. They ranged themselves in parallel rows as before, facing each other, and danced backward and forward, striking the lower ends of the rods upon the earth and keeping time with the clash. Some young women went up to these dancers from time to time and, taking them by the arm, danced with them. Then, at a signal given by their partners, who shook the coverings of beetles' wings and other ornaments with which their legs were adorned, they ran off to their companions like frightened deer (Br, 157). It was in the course of the Hauyari that the deceased woman's relatives cut the man's hair and washed him with paiwarri. If a well-behaved man, only a little of the hair would be cut, and the liquor poured through a sifter over him; but if he had treated his late wife badly, revenge would be taken by cutting off all the hair, and dashing the paiwarri promiscuously over him. On the conclusion of the above dance the assembled company would rush down to the waterside to bathe, and, provided the amount of drink proved sufficient, there would subsequently follow the dancing and singing connected with various other birds and animals, from the warracabba and humming bird to the monkey and the tapir—dances which could also take place normally on ordinary occasions of general festivity. Everything would finally come to a close, with the guests all together, kicking the empty paiwarri trough outside the house. It would be well to refer for further particulars of the Makuari and Hauyari dances to the works of Brett (Br, 154 et seq.), Dance (Da, 271 et seq.), and Im Thurn (Ti, Dec. 1889, 282, etc.), though it must be admitted that the first and third of these authors, while omitting important details as to their actual interpretation and signification, have devoted comparatively greater attention to their general description than they really deserve.

848. "The Atorai, members of the Arawak stock are the only tribe in British Guiana," says Schomburgk, "that burn their dead

and bury the ashes" (SR, II, 388). On the River Uaupes, the Tariana, also of Arawak stock, . . . about a month after the funeral disinter the corpse, which is much decomposed, and put it in a great pan or oven over the fire until all the volatile parts are driven off, with a most horrible odor, leaving only a black carbonaceous mass, which is pounded into a fine powder and mixed in several large *couchés* (vats made of hollowed trees) of *caxiri*. This is drunk by the assembled company until all is finished . . . (ARW, 346).

849. *Warrau*.—The procedure adopted seems to have varied. On the Orinoco, in Gumilla's time, as soon as an Indian died he was tied up with a strong rope, sunk in the river, and the end of the rope fixed to the trunk of a tree. By the following day certain fish (*guacarito*) would have cleaned off all the flesh, vessels, membranes, and gristle. The skeleton was then taken out and the bones packed according to size in a basket already provided, worked with glass beads of various colors. Care was taken that the skull of the deceased came to be the lid of the basket. The basket was then hung up to the roof of their houses along with the many other baskets containing the bones of their forefathers (G, I, 199). This method of removing the flesh was also practiced in Surinam, as noted by Stedman. Some tribes of Indians having put their deceased friends in the above posture, place them naked for a few days under water, where the bones being picked clean by the *piree* [*pirai*] and other fish, the skeleton is dried in the sun and hung up to the ceiling of their houses or wigwams; and this is done as the strongest instance of their great regard for their departed friend (St, I, 400). On the Orinoco, in Crévaux's day, no mention is made of the preservation of the bones on the above lines. On the other hand, some interesting notes from Macareo Canal, at the mouth of the mighty stream, have been left us by this traveler. Upon the death of a woman the husband lies down in front of her. He remains there a few minutes, weeping and singing, and then makes way for each and all who have ever had connection with the deceased, a ceremony during the course of which extraordinary processions of the most unlikely persons have been witnessed.

Crévaux admits the unusual form of sepulture of an old woman buried in her hammock in a 1-meter deep grave dug by four young women. In the case of a young boy 12 years of age, two men scooped out a tree in the form of a coffin. The body, enveloped in its hammock, having been placed inside the "box," was covered with laths placed lengthwise, the interstices being all closed with muddy clay by the women. The "coffin" was finally placed on two forked boughs stuck into the ground in the neighborhood of the hut. An abandoned habitation in front of the village served as a sort of cem-

etary. There were several "coffins" inside it (Cr, 612). On the upper Moruca, in the case of a male, as the grave was finished, the corpse was rolled up in its hammock and buried in the sitting position. The deceased's property and weapons, some bread, fruit, and dried fish were next put in, and then his faithful hunting dog killed and buried with him. While the grave was yet half closed, the widow and sisters jumped in and trampled down the earth, wailing all the time. A fire was subsequently lighted on the mound, where it was kept burning for several days, the widow and female relatives squatting around. Immediately upon completion of the burial, other women proceeded to the provision field, and on their return started to make *paiwarri* as quickly as possible. . . . Neither the widow nor relatives took a hand in these preparations, but sat in a circle round the grave, breaking out ever anew with their song of mourning, which was approximately as follows: "Why have you left your wife, children, and friends who loved you so dearly? Why have you left your home and your field where the yams and cassava were thriving so well? Oh, Yawahu!" [Schomburgk evidently in error gives here the Arawak name of the bush spirit instead of Hebu, the Warrau term.] "You must have taken him from us by force. He would never have left his fields and his people of his own accord. Return him to his friends, from whom you robbed him, so that he may hunt *aguti* and ape and find yams and cassava. Who is going to catch *aguti*, ape, fish, and turtle for me now?" (SR, II, 446.) If a captain or any other individual of influence dies, the corpse is put into a canoe and all that he possessed when alive. On his heart is placed a looking-glass, and into his hands his bows and arrows. His favorite dog is killed and its carcass put with him into the grave, but not in the canoe, to assist him in procuring his food in the untried world. The corpse is always buried on the same spot where the person expired, and a fire is kept burning there for many weeks. The relations and friends bewail the deceased . . . for several months together (BE, 53). Schomburgk mentions the case of a Warrau *piaman* being buried in the house where he died, the building as well as the whole village being burned (SR, I, 159). McClintock is the authority for the statement given by Brett, that when the death of the deceased is believed to have been brought about by unfair means, the bow and arrows are placed at the side of the corpse that he may have the means of keeping off "malignant spirits" in his passage to the other world (Br, 356).

[A variation of the arrangement above described was observed among the Warrau at Warrapoke, Waini River, in 1900, by a reliable correspondent, who reported the facts to me. About a week subsequent to the death of a male, the performers all danced in a ring

inside the house, the ring itself moving around. Every now and again one of them would leave the circle for the center and make himself as it were temporary master of ceremonies. From here he would stop the ring, speak, start it again, and after whipping promiscuously here and there twice, return to join the ring, which another thereupon left to take his place. Only one whip was used, and no women took part in it. The whip was apparently similar to that observed among the Arawak.]

850. *Otomac*.—"Although the dead," says Gumilla, "are buried, and with them bread and liquor, they disinter the skulls, after the lapse of a year, and carry them to the shade of their ancestral home, depositing them in the crevices that are to be met with between the crags and stones forming this Barraguan Rock, where a large number of calvaria are to be seen, unless they are already turned into stone, as the people believe" (G, 1, 113). It was customary for these Otomac to build their own places of sepulture beforehand (G, 1, 184), and to bewail the dead as a matter of daily routine. Thus, as soon as the cocks crow, about 3 o'clock in the morning, the air is rent with a sad and confused sound of cries and lamentation, mixed with tears and other appearances of grief. They are mourning the absence of their dead. Some mourn for their fathers, some for their husbands, others for their mothers and brothers. They mourn not by way of ceremony, but in very truth. When day breaks, the wailing ceases, and joy reigns—reigns until midnight, the hour at which, overcome with dancing (unless it rains or thunders), they go to sleep for three hours. This practice is very different from that observed by other nations, who lie down to rest at nightfall, and get up to bathe at the first dawn of day (G, 1, 167).

851. *Saliva*.—Records of the burial and mourning customs of this nation and its allied stocks, the Piaroa and Ature, are to be found in the writings of Gumilla, Crévaux, and Von Humboldt, respectively. The following is an abridged description of that of a brother of the Saliva chieftain Pugduga. Some men were ornamenting the grave which was in the middle of the house where he had died. Others were gone to fetch turtle and fish for the guests, while the women were busily engaged in making chicha or beer. The deceased's relatives repaired to the different villages with invitations for the appointed date. "On the evening fixed for the celebrations the chieftain took us," says Gumilla, "to have a look at the place of sepulture, close to which the widow was weeping. Her hair was clumsily hacked off, and she wore none of those ornaments which women usually sport; indeed, widows are not allowed to anoint themselves until after a considerable period of mourning. The grave itself (pl. 160 B) was inclosed with well-made latticework decorated in various colors. At the

four corners and halfway down the sides were planted six excellently carved columns, two of which terminated in crowns, two in birds, and the two front ones in figures represented in an attitude of lamentation, with hands before their eyes. As each company of visitors arrived in happy mood, it commenced crying in earnest upon reaching the house of mourning, their wailing being answered by those within the building. This melancholy business over, each company started singing and dancing." Among the funeral musical instruments which Gumilla had never seen before were certain tubes or trumpets made of clay, bamboo, and bark (secs. 556-559), to the accompaniment of which a number of very pretty and varied dances were executed. Among the dances described were a series in which 12 men, extraordinarily decorated with macaw feathers and feather ornaments, took part. Each one carried in his right hand a long osier, entirely covered with a variety of plumes, and tied to the very top of a ring, also inclosed in feathers, the weight of which made the 12 sticks almost bend into a semicircle, so that together they formed a dome or beautiful cupola, from the center of which hung the ring. On the following morning the deceased was finally eulogized: "What an excellent fisher we have lost!" "What a clever archer has died!" "He never missed his mark," etc. Then, followed by some more dancing, a procession was formed to the river, those from the house of burial coming last, together with the four Indians who carried all the mortuary decorations and musical instruments, which were now thrown into the stream. They next all had a bath and returned to the houses, where the women of one company brought food and drink for the men of another company, and vice versa, this bringing the ceremony to a conclusion (G, I, 191-196). Brinton says that the Saliva had a custom of disinterring the bones of their dead after the expiration of a year, burning them, and then collecting the ashes to mix with their drinking water (BRI, 267). Similar practices apparently took place [?by Carib] in Surinam (BA, 231), among the Betoya (ARW, 347; KG, II, 152) of the Uaupes district and among the Carib Islanders (PBR, 252).

852. With the Piaroa when a person dies they immediately tie him up in the foetal position inside a shoulder basket, to prevent rigor mortis, and then roll this in bark, which is bound up with vine rope like a bundle. This they place in a hole dug in the savanna. They do not cover it with earth, but construct a palm-leaf shelter for it. At its side is laid cassava, bananas, a blowgun, and a quiverful of arrows dipped in curare. A year later the remains are removed to the common cemetery in a hollow under a big rock, most often very far from the village (Cr, 548). On certain mummies of these people which were opened by Crévaux on the Mataveni River (a branch of

the Orinoco), he found necklaces, ornaments, and a hammock, and at the side of each a vessel which he learned later contained the *couria* to stimulate the deceased in his travels in the other world (Cr, 544). Humboldt thus describes what he saw in the cavern of Ataruipes, the cemetery of the destroyed tribe of the Ature, a people belonging to the same linguistic stock as the Saliva. It contains nearly 600 skeletons, well preserved and regularly placed. Every skeleton reposes in a sort of basket made of the petioles of the palm tree . . . from 10 inches to 3 feet 4 inches long . . . The bones have been prepared in three different manners, either whitened in the air and the sun, dyed red with annatto, or, like mummies, varnished with odoriferous resins and enveloped in leaves of the heliconia or of the plantain tree. The Indians informed us that the fresh corpse is placed in damp ground, that the flesh may be consumed by degrees. Some months afterwards it is taken out and the flesh remaining on the bones is scraped off with sharp stones . . . Earthen vases, half baked, are found near the mapires or baskets. They appear to contain the bones of the same family. The largest of these . . . urns are 5 feet high and 3 feet 3 inches long [? wide]. The handles are made in the shape of crocodiles or serpents. The edges are bordered with painted meanders, labyrinths, and grecques (AVH, II, 289, 482). In a cave high up among the rocks on the island of Cucurital (Orinoco River close to the Ature village), Crévaux came across a large number of earthenware vessels of different shapes, of which each one contained remains of an Indian. Other remains were simply enveloped in a sort of palm mat (Cr, 561). This traveler was apparently under the impression that he was dealing with relics of the Guahibo, but, judging from what has been mentioned above concerning the Ature method of burial, the situation of the island in the Ature country, coupled with what he himself says concerning ground burial of a Guahibo chieftain, it is more probable that he was dealing with an Ature cemetery similar to that already referred to by Humboldt.

853. *Guahibo and Chiricoa*.—When any sick person [carried along] in the baskets dies on the march, the carrier leaves the track, and with a couple of assistants from among the last men in the file, buries him; but not always [says Gumilla] for I have on several occasions come across these people with their skulls and bones (G, I, 254). The latter portion of this statement of the old Spanish father points rather to the practice of exhumation and is of interest in connection with the following description given by Crévaux from among the same folk, a century and a half later, in so far as it relates to the exhumation and reinterment subsequent to a shorter or longer period of mourning. The French traveler is referring to the burial cere-

monies taking place on the Vichada River in celebration of the anniversary of a Guahibo chieftain's death: Accompanied by her family, there arrives the widow carrying on her back the pack (*hotte*) containing her husband's mortal remains. The men belonging to the village play the flute (*caruso*) while a medicine man casts, or rather blows, a spell over (*souffle pour jeter un sortilège à*) the individual who caused the death. They dance; they drink. Later on they bring a bag containing all the deceased's property. . . . The widow drops her pack in the middle of the hut, and, laying hold of the bag, takes out of it, one after another, all her late husband's possessions: "There's his lap!" she exclaims. "There's his feather crown," and so on, and as each article is exposed they all start lamenting. Everything is then returned into the bag, dancing and drinking is resumed, and a grave dug in the middle of the hut. The remains of the illustrious captain having been deposited in this hole—it is circular and about $1\frac{1}{2}$ meters deep—they are covered with earth. The widow is now placed on the grave, and the scrap of cloth which, for the occasion, has covered her chest, is removed. While she holds her hands above her head, a man comes forward and strikes her breasts with a switch—this man is her future husband. And though other men come to hit her on the shoulders, she submits to all this whipping without a murmur. The fiancé, his hands joined above his head, now takes his turn and receives his thrashing without a groan. On the conclusion of this ceremony, they put another woman on the grave and pierce the tip of her tongue with a bone (sec. 924). The blood runs down her bosom. A medicine man besmears her breasts with it, and she is given drink. Dancing is renewed. During the course of the evening a big fire was made, and all dancing up to it, the medicine man jumped over, at the same time blowing into it with full force, the others, men and women, then following his example. They blew into the direction of the country occupied by their terrible neighbors, the Piaroa, who bring death into their midst by spells over them. The men finally squatted on the little benches, and the women painted them from top to toe with a red paste. The latter said that this would protect them from sickness. Burial only takes place a year after death, and in this instance the mortal remains of the chief had been drying all this time in the hut where he had succumbed. They had abandoned the old village after his decease (Cr, 548).

854. *Betoya*.—When anyone [of the Anabali, a stock of the Betoya] died, they buried him in the place where he had his hearth, and covering the grave with many mats, the people left their village and all their fields, to build and plant and till at 12 or 15 leagues' distance. They said that when once death had entered their settlement,

they could not live in security. But when these folk subsequently advanced to a settled life, and a sick person died they immediately broke up his house and burned all his possessions (G, I, 206). After having covered the body and placed a mound of earth on top, the Betoya sing and cry at the same time close to the grave. At nightfall all the relatives and friends are invited. The men come with their peculiarly constructed flutes (*baxones*). . . . The girls are seated on one side of the grave, the boys on the other. Behind the girls are seated the women, and behind the boys the men. The function begins with the widow or widower crying out in a sad tone, mixed with tears, "Ah! Woe is ours, now that he is dead! Woe is ours"! without another word. And then comes the reply in the chorus of voices of the women and boys and the flute accompaniments and so on, producing a sad and melancholy harmony (G, I, 202).

In Wallace's time, the Tukano and Kobeua (both belonging to the Betoya stock) as well as the Tariana (Arawak stock) of the upper Uaupes River, disinterred the corpse about a month after the funeral, placed it in an oven over the fire, and pounding the mass thus charred to a fine powder, mixed it with cassiri and drank it (ARW, 347). The same thing is reported of the present-day Kobeua, except that a longer interval is allowed to pass, and the skull alone spared (KG, II, 152). Some death-festival dances from the present-day Kobeua of the upper Rio Negro have been described (KG, II, 151-152).

855. *Jirara, Ayrica, etc.*—The only reference I can find to the mortuary customs of these people is that given by Gumilla to the varying signs of mourning adopted by the next of kin. Making from a fruit called jagua [probably *Genipa americana*] an infusion of a very black tint which lasts for a long time, notwithstanding washing, the wife and children, brothers, and sisters, stain their whole bodies from head to foot; the relatives of the second degree of consanguinity, their feet, legs, arms, hands, and part of the face; relatives of the third degree, only the feet and hands, and a few spots or blotches on the face. These people are very careful to keep up mourning for the space of a year, and during this period the widowers or widows repel all offers of marriage (G, I, 201).

856. *Carib.*—On the Orinoco we have the following account by Gumilla of the burial of a Carib captain: The body is slung up in a cotton hammock, and for a space of 30 days his wives have to take turn and turn about in keeping on either side of the corpse to see that no flies settle on it. Not only is this an almost insufferable task, even at the end of 24 hours in those tropical regions, but each woman is wondering to herself all the time whether she is to be the one chosen to accompany her lord to the grave. When the children and

parents of the deceased arrive on the day appointed for the funeral they lay on one side of the dead man's body his bow, arrows, club, and shield (*rodela*), and on the other place one of his wives to look after and accompany him, after which the elder son inherits and takes possession of the deceased's wives, except the one who bore him, and she it is who usually accompanies the dead. The bones are exhumed at the end of a year and, inclosed in a basket, are hung from the roofs of the houses to keep them ever in memory (G, 1, 200).

857. Coming to more recent times, in Demerara, if the deceased Carib were a person of some distinction, his bones after burial were cleaned by the women and carefully preserved in their houses (Br, 129). In the same colony Bernau also recognizes a difference in the funerals accorded to the so-called upper and lower classes. He seems, however, to have taken his information from Schomburgk's account of the upper Pomeroon Carib (SR, II, 431-432). Thus, if the individual departed be a man of consequence, the corpse is put into a hammock and watched with much solicitude. The women and nearest female relations wash it often with water. After it has become putrid and nothing but the skeleton remains, the bones are cleaned, painted, and put into a pegall, or basket, and carefully preserved. If they should happen to quit the place, the bones are burned in the place where the person expired and the ashes carefully collected and taken with them. The women who have been engaged in scraping and burning the bones of the dead are considered unclean for several months after, and are not allowed to touch any of the food eaten by the men. In ordinary cases, however, the body is interred in the hammock in which the person died (BE, 52), outside his hut, and the bones, which are subsequently exhumed, are divided among the relatives (SR, II, 431-432).

858. Stedman is apparently referring to the Surinam Carib, or Indian of Carib stock, of whom he says: "When an Indian is dead, being first washed and anointed, he is buried naked in a new cotton bag [? hammock] in a sitting attitude, his head resting on the palms of his hands, his elbows on his knees, and all his implements of war and hunting by his side, during which time his relations and neighbors rend the air with their dismal lamentations. But soon after, by a general drunken riot, they drown their sorrows until the following year. . . . At the expiration of the year, the body, being rotten, is dug up, and the bones distributed to all the friends and acquaintances, during which ceremony the former rites are repeated for the last time, and the whole neighborhood look out for another settlement" (St, I, 399). In Van Berkel's day, in the latter half of the seventeenth century, if the deceased Carib had any male or female slaves they were killed so that they might wait upon

their master (BER, 134). The same custom prevailed among the Islanders (sec. 860).

859. The following is the account given by Barrère of the Cayenne Indians, presumably also of the Carib stock: Generally speaking, as soon as a person dies, everybody—men, women, parents, friends, children—collects at the karbet, and there they shed bitter tears, but this is chiefly the business of the nearest female relatives who wail in harmony or rather, while singing, address the corpse. These mourners, usually squatting on their heels, pass both hands slowly over the body from top to toe, and reproach him for having passed away. "Weren't you satisfied with us?" say some, and "What have we done to you that you leave us like this?" say others. They also add: "You were so good a hunter!" "You were great at catching fish and crabs!" "You were so smart at clearing a field!" and a thousand similar little things. They thus review his whole life. The Indians repeat word for word what these mourners say about the deceased. You can imagine what the symphony is like! They then carry the corpse, adorned in all its ornaments, to the great karbet, which is the cemetery common to those of the same nation. They make a circular pit, not too deep, and in it, squatting in the foetal position and enveloped within a hammock, they place the body. Some earth is thrown on top, and upon this a fire is kept alight for some 15 to 20 days. . . . The nearest relatives and best friends go into mourning. They cut the hair of their head very short and wear no finery, some nations going so far as not even to wear a lap at these times. They strictly observe close retirement. The women especially keep out of the way, and only come out very early in the morning, or late at night, in order to go and cry at the grave. This goes on for a long time. They religiously abstain during this period from eating certain meats, refrain from cutting large timbers, and pursue other practices of this nature (PBA, 228-229).

860. On the islands there are the records of de la Borde, as well as of Rochefort, as to the death and burial ceremonies, and these accounts fairly agree. Thus, according to de la Borde, when a Carib dies the women wash him, comb, and rub ruku on him; place him in a hammock and paint his lips and cheek with vermilion. Afterwards he is wrapped up in his hammock and buried. The hole is dug in the hut; he is placed in a sitting attitude, resting on his heels or with the arms across the chest, with two weights on the eyes that he may not see his parents and not make them ill (WER, VI, sec. 253). They make fire round the tomb to purify the air and that the deceased may not catch cold. All his goods are buried, a man covers him with a board, and the women throw earth on it. If the deceased owned a Negro the latter is killed in order to serve his master in the

other world. His dog is also buried to guard him and watch those that caused him to die. They then begin their screams. The whole hut resounds with tears and groans. They are seen dancing, crying, and singing together, but in a doleful voice. They say only two or three words at a time, such as, "Why are you dead?" "Were you tired of life?" "Did you not have enough cassava?" repeating the same thing. But if he has been killed they will say something against the murderer and praise the defunct. If he has relations in other huts they all meet to cry, and the widow is present and gives kick-shaws to those who cried the best, and as a last sign of their mourning they cut their hair. I have been told that formerly they burned the bodies of their captains and mixed the ashes in their drink; but this custom is abandoned now, because there are no more braves (PBR, 252). According to Rochefort, after the washing and painting of the corpse it was wrapped up [in the foetal position] in a new bed [hammock] until all things were ready to dispose it in the ground. They commonly made the grave within the house of the deceased; or if they buried him elsewhere, they always made a covering over the place where the body was to be laid. And during the space of 10 days, or thereabouts, twice every day the relations and the most intimate friends came to visit the deceased party at his grave; and they always brought him something to eat and drink, saying to him every time, "Alas! why wouldst thou die? Why wilt thou not return to life again? Say not at least that we refused thee where-withal to live upon, for we have brought thee somewhat to eat and drink." And after they have made this pleasant exhortation to him, as if he should have heard them, they left the meat and drink they had brought with them at the brink of the grave until the next visit, at which time they put it on his head, since he thought it much to stretch forth his hand to take it . . . The Caribbeans of some islands do still set meat at the graves of the deceased, but they leave them not so long as they did heretofore ere they covered them with earth. After the funeral lamentation is ended and the women have wept as much as they can, the corpse is buried in the 4 to 5 foot deep grave. This is round like a tun, and at the bottom of it they set a little stool, on which the relations and friends of the deceased place the body sitting, leaving it in the same posture as they put it in immediately after death. After they have let it down into the grave some friend of the deceased lays a plank over his head, and the rest put the earth together with their hands until they have filled the grave, and make a great fire about it. All the more ancient, both men and women, kneel down. The men place themselves behind the women and ever and anon they stroke them with their hands over their arms to incite them to lament and weep. They burn all that belonged to the de-

ceased. They also sometimes kill the deceased's slaves to accompany the ghosts (*les manes*) of the dead, and to wait on them in the other world . . . At the last visit they make to the deceased they bring along with them all the things he had used or worn about him in his lifetime, to wit, his bow and arrows, the boutou or club, the crown of feathers, pendants, chains, rings, bracelets, baskets, vessels, and other things, and bury all with him or burn them over the grave . . . After the body is covered with earth the nearest relations cut off their hair and fast very rigorously, out of a persuasion that by that means they shall live longer and more happily. Others forsake the houses and the place where they have buried any of their kindred and go and live elsewhere. When the body is near rotted they make another assembly, and after they have visited and, sighing, have trampled on the sepulcher, they have a merry meeting, at which they drown all their grief in ouicou. Thus the ceremony is concluded and the poor carcass is no further tormented (RO, 566-570).

861. *Akawai*.—McClintock (whose many years' position as post holder gave him opportunities of obtaining a most intimate knowledge of the Indians) says that the Akawai like to bury their dead in a standing position, assigning this reason: "Although my brother be in appearance dead, he (i. e., his soul) is still alive." Therefore, to maintain by an outward sign this belief in immortality, some of them bury their dead erect, which, they say, represents life, whereas lying down represents death. Others bury their dead in a sitting posture, assigning the same reason. When the death of any member of that tribe is supposed to have been brought about by unfair means, the knife of the deceased is buried with him. . . . that he may have the means of avenging himself in the world of spirits (Br, 356). Akawai bury the corpse in the hammock in which the person died, burn the hut under which he expired, and abandon the place after a short time, with the intention of never returning to it again (BE, 51).

862. *Galibi*.—Galibi keep the body a week before burying it, laid in a hammock, and the decomposing fluid oozing from it is collected in a vessel below. Some drops of this have to be drunk by the *piai novitiate* (Cr, 151).

863. *Makusi male*.—At Pirara (Reverend Youd having forbidden burial inside the hut) the sons carried their father's body in his hammock to the churchyard, the wife and daughter following with fruits, bones, several thongs, and a flask filled with water. While the grave was being dug, the two women sat at either side of the corpse, singing a monotonous dirge, carefully brushing away any insect that settled on the body and protecting the deceased's face from the sun with twigs. When dug, the grave was covered in with palm

leaves and the corpse fixed in it in an almost sitting position, with head toward the west. All the objects which the women had brought were put into the grave. To these were added a drinking cup and the deceased's knife. The man had died in a high fever, and having been tormented with thirst had asked his people to see that a flask of water should be supplied him in the grave, so that he might quench his thirst on the long journey to his friends who had gone before. The thongs were put into the grave so that, when on the road, if he should meet the *kanaima* who had caused his death, he might be able to tie him to a tree. The body was then covered with palm leaves, the grave closed in, to the accompaniment of crying and howling, and a large fire lighted on top. The hammock, however, was not burned (as was the case with the Makusi woman at Nappi), but was hung up on a neighboring tree, where it was left to decay (SR, I, 468). In the case of a Makusi boy who died at Waraputa, Essequibo, the spine, legs, and arms were broken and the body rolled up like a snake into a small metal box, obtained in barter. This was placed on a staging, under which a fire was kindled, in a hut in the forest, whither the deceased's people would return in a year's time to fetch the skeleton and bury it in their village (SR, I, 325).

864. *Makusi female*.—The following account is abridged from the account given by Schomburgk of what he witnessed at Nappi, on the upper Essequibo. The friends were crying in the house, and surrounding the hammock, wherein the corpse lay, they shook it, and after a while, in and between the waiting, they chanted eulogiums about the deceased. One had lost her best friend, another praised the fine cotton thread that she had woven, another the various objects that she had possessed, each mourner ending her lamentation with *asamanda! asamanda!* (i. e., dead! dead!). All this time the men and the widower sat in silence. The son dug the trough-shaped grave some 3 or 4 feet deep in the house floor. This completed, the relatives cleared the house of everything, domestic effects, with hunting and fishing implements, inclusive, to an accompaniment of the wailings of the women. When the last article had passed out of the door, in came the *piai*. He proceeded to the head of the corpse, bent down to the left ear, and, shouting several words into it, retired. [Elsewhere in the case of another Makusi woman's death, that of "Kate," by snake poison, there was a similar shouting by all the women of unintelligible words into the corpse's ears (SR, II, 269). With regard to this shouting, see footnote in WER, VI, page 156.] Relatives next loosened the hammock from the beams, lifted it with the corpse into the grave, which was covered at the bottom with palm leaves, and then drew the hammock out from underneath. Raging screams, worse than ever, now replaced the wailing. They

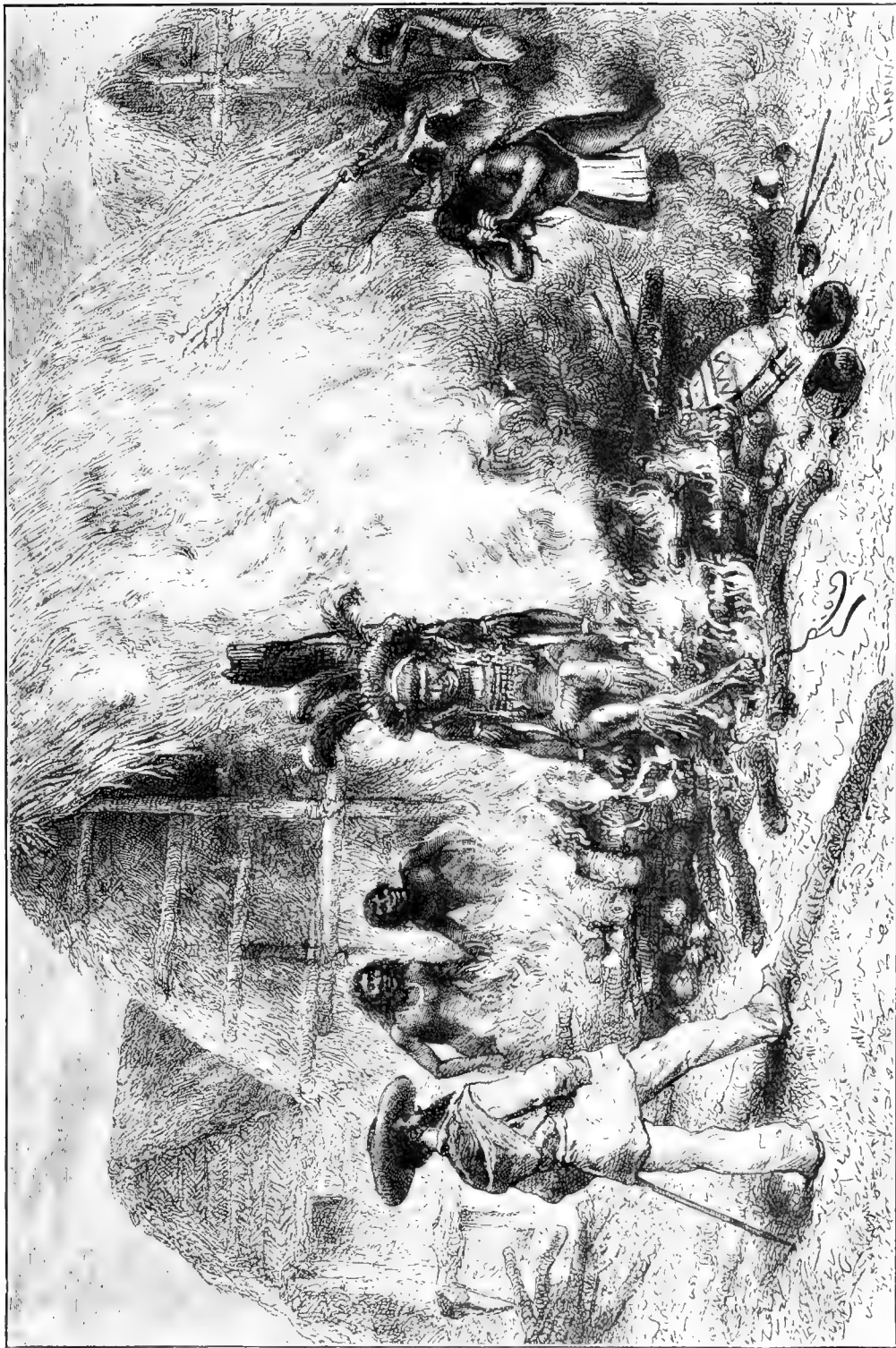
next surrounded the grave and each one jumped over it in the direction whence he had come. Even the barely 12-week-old orphan was taken in the arms and made to jump over it. [Compare remarks re jumping over a recumbent person in WER, vi, sec. 220.] All this time the widower had been silently seated in the hut without taking any active part in the proceedings. He now suddenly arose, and, taking a calabash filled with red paint, emptied its contents over the corpse, and then broke it into fragments over it, only retaining that bit which he had clenched in his hand, and this he threw out at the door. [Is this procedure a relic of the Carib, etc., custom of painting the corpse?] During this ceremony the relatives had withdrawn, but they now returned with little bits of bone, fruits, and bread, etc., that they strewed on the dead body, which was finally carefully laid over, and covered in, with split stems of the manicol palm. This done, the piai came back with a bundle of hair, and, bending down, exposed the deceased's face from among the laths, spat on it, and then plugged the hair into the ears and mouth while he continued spitting. He then addressed the dead in a harsh and rough tone and went away. The laths were next put back in place and covered over with palm leaves. In the meantime several women, continuing their lamentations, brought some water which they handed to the widower and the dead woman's sister, who poured it onto the excavated earth, with which they mixed it, and, still wailing, this they turned over on the palm leaves to a height of about a foot, the moistened earth being intended to prevent encroachments by ants. Immediately on top of this compact mass were placed several of the deceased's household effects and the grave closed in. The hut was now emptied of its weeping inmates, and most carefully cleaned up, whereupon all the things that had been previously taken out were now put back. Before this was done, however, they sorted out the things belonging to the deceased, and these, together with her hammock, were then burned outside the hut, and the ashes strewn around by the widower, who next lighted a fire on the grave, and this he left burning for some hours. The unburned faggots and ashes were suffered to remain. The burial ceremony was now ended. The deceased's sister, who occupied the same house, kept up the mourning and lamentation for three weeks, both by day (especially upon her return from the field) as well as by night. During this period she had to put aside her string beads and discard all decorations. . . . In addition to leaving off all ornaments, the Makusi paint themselves strongly with annatto, cut off their long hair, and the cheerful countenance is not observed until the hair has grown again to a certain length. By the following morning the nearest relatives had painted themselves from head to foot with annatto;

relatives of the second degree, only feet, legs, and arms; those still further removed, only the hands and feet. The house in which the dead is laid is sooner or later forsaken by its occupants (SR, I, 421).

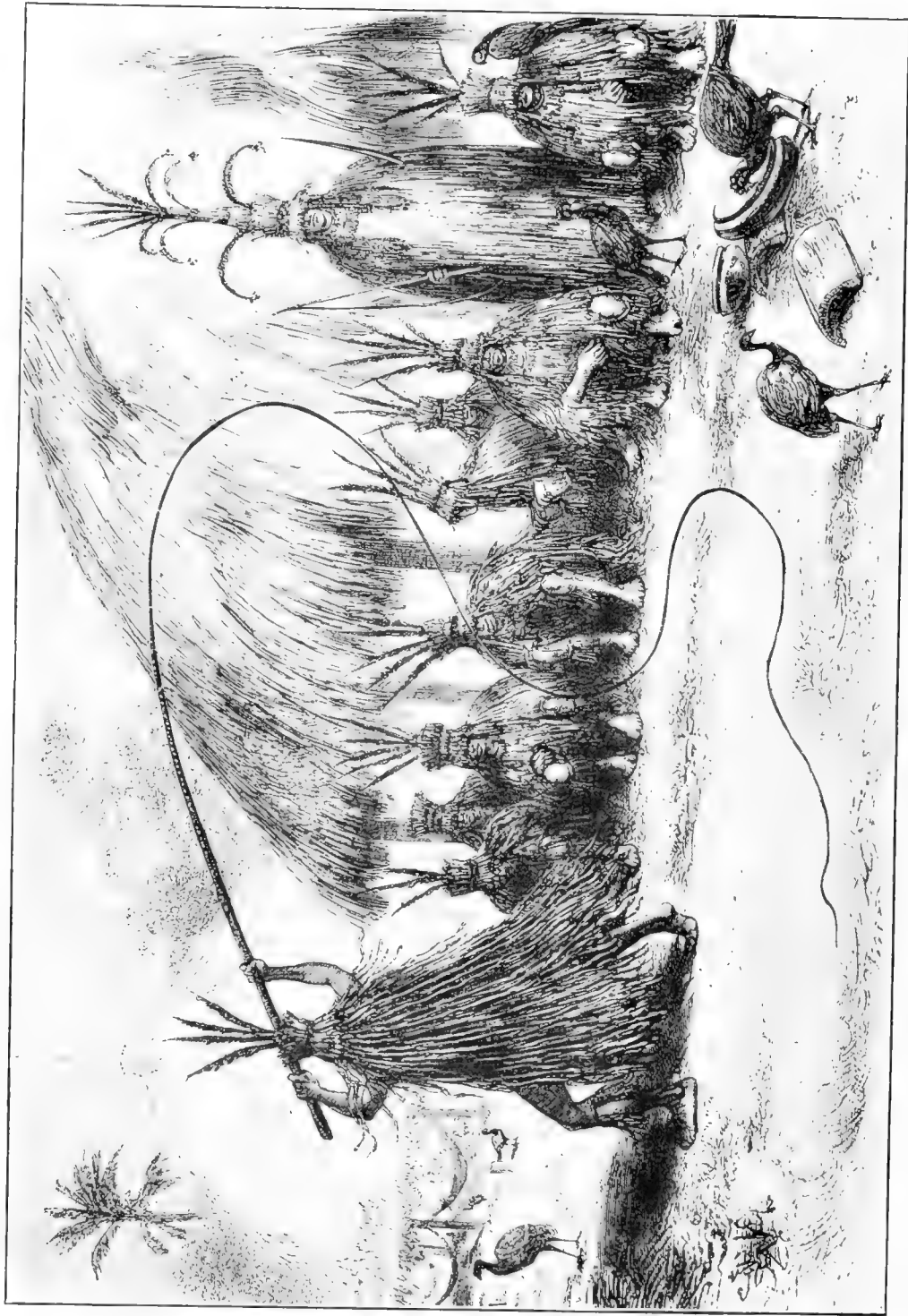
The widower must mourn for from 9 to 11 months, i. e., until the cassava which has been planted at his wife's death is ready for the paiwarri feast to celebrate his second marriage (SR, II, 318).

865. *Ojana (Roucouyenne)*.—On the upper Yary, Cayenne, the friends of the sick man have a strange way of expressing their affection. It is to bring into his logie the biggest load of resinous wood, which is to be used in burning his body after death. . . . There is a platform made of beams, at the back of which is a stake driven into the ground. This stake is to prop up the body, which is seated on the funeral pyre (pl. 182). The deceased is clothed in his finest ornaments; a crown of bright-colored feathers on his head; to his neck are attached his collars, wooden comb, and deer-bone flutes; arms and legs are covered with bracelets. The widow, sobbing, smashes up all the clay vessels and everything else that he had used. . . . The ashes, collected in an earthen vase, were placed on the widow's hut, and a year later will be placed in the ground. There is a general cleaning up not only of the deceased's house, but of all the houses in the village (Cr, 120). The corpse of a medicine man on the upper Oyapock was not burned like the others. Under a miniature hut the body, wrapped in a hammock, is laid in a hole 2 meters deep; the dried corpse, hard as parchment, is painted completely red; the head is decorated with bright-colored plumes; the forehead is decorated with alligator scales; at the neck is a bone flute, etc.; and under his hand a bow, arrows, and a club. Near by is a large jar, but it is empty. The Roucouyenne do not supply their dead with food (Cr, 238). One must not speak nor land anywhere in the near neighborhood of a medicine man's grave, in case of meeting the "tiger" medicine man who guards his [human] brother (Cr, 298). At an Oyana village on the Tapanahoni, Surinam, in a case reported by De Goeje of three people dying in 1907, the deceased were buried in a house; and their wives and children cut their hair short, this hair being apparently buried with the deceased. The houses were burned, and a month later the village was deserted, the survivors having established themselves in another one (GO, 15).

The Oyana (Roucouyenne), Apouroui (Cr, 236), and other Indians celebrated two festivals in honor of the dead, the Pono and the Toulé. In the former all the men are covered with long black bark strips, starting from the neck, and a kind of toque similar to that used by our [French] magistrates (pl. 183). One man alone stands up, holding in his hand a whip 8 meters long, which with a swirling motion he cracks like a pistol. Each one takes it in turn to get



CREMATION OF A ROUCOUYENNE. (After Crévaux.)



THE PONO DANCE (After Crévaux.)

up and crack the whip. The other Indians, seated on their heels, applaud, etc. (Cr, 258). The festival of the Toulé has been thus described: Toward 4 in the afternoon 20 men enter the village in Indian file. They wear their small feather crowns with two red macaw tails on top. The head of the band, who is to the right, has a big bamboo flute, with which he produces low and melancholy notes, at the same time balancing himself on his right leg. The others, with a smaller flute, respond, but in a higher key. Arrived at the center of the village, they form a ring, around which they start circling, continually playing the same tune and nimbly beating time by striking the ground with the right foot. It is a living wheel, in motion all night, accompanied by the "tootling." Its axle is a large jar of cassiri, where the dancers quench their thirst. As rewards to the women for having opened the floodgates of hospitality, the night through, the dancers, most of them strangers to the tribe, bring out next day various articles, such as a shoulder basket, a sifter, a pot spoon, etc., all new and artistically worked, which the women are dying with envy to possess. The owner of the basket sits in the middle of the place with a stick which he hides behind his back. A young woman comes to seize the object, but instead receives a heavy whack on her fingers amid the laughter and plaudits of the audience. A second, more dexterous, avoids the blow and carries off the basket. This distribution of the presents and the blows occupies more than an hour. The women respond to the generosity of the guests by bringing them three large jars of cassiri. . . . The death of a woman is not followed by any kind of festival (Cr, 296).

866. *Oyampi*.—The Oyampi of the Oyapock River do not burn their dead like the Roucouyenne, but bury them in a very deep hole, though not more than a meter long. The body is placed vertically in the foetal position. Sometimes the body is allowed to decompose out in the bush and at the end of a twelvemonth the bones are buried in an earthen pot (Cr, 157-158).

867. *Palicour*.—When a Palicour dies on the road they strip off the flesh, boil the body, and remove the bones, which they guard with great care (until they get home again), or to save this trouble they may bury the body and come some time after to collect the bones (PBA, 230).

CHAPTER XXXIV

SEXUAL—MARRIAGE, POLYGAMY, DIVORCE, WORK, AND LABOR

Marriage: By betrothal (868); choice on man's side (869); temporary exchange (870); purchase (871); capture (872); choice on girls' side (873); right of birth (874).

Marriage usually with parents' consent (875).

Variable degree of consanguinity observable (876).

Marital and family relationship: Arawak (877, 878); Carib (879); Warrau (880); personal names (881).

Discrepancies of age (882).

Members of different tribes (883).

Puberty and prenuptial ordeals of the male (884); of the female (885).

Marriage customs: Drinking, dancing, etc. (886); gifts of food, firewood, etc. (887); combing, etc., of the hair (888).

Position of husband and wife in family circle (889).

Relations between husband and wife (890).

Mother-in-law (891).

Polygamy: Its prevalence (892); factors (893); wife's sister (894); household (895); relative position of wives and children (896).

Widowhood (897).

Divorce (898).

Relations of sex to labor (899-903).

868. Marriage, or rather the cohabitation of male and female, is not as a rule regarded in a serious light. Engagement and courtship are out of the question, while kissing and cuddling are said to be practically unknown. Among Arawak, as well as Carib, the beauty of a girl is judged by her feet, her face being of secondary importance. To make himself pleasant to a wench, the Indian youngster will say: "What dainty little feet you've got! Your eyes are like a deer's, and you are as nimble as a spider monkey!" Cold and heartless as the mating is to us, it is not entirely wanting in romance. The redskin lass does not, however, confess her love to the violet or daisy like her European sister, but confides it to the kulasili (thrush). "Sing! my kulasili, and tell him how I love him." And the thrush sings and is answered by another thrush, and so throughout the forest and savanna, the song of love is carried along. "Oh! may he understand what the kulasili says," sighs the belle. And the youngster will express his heart's desire in the same manner (PEN, I, 136, 137). Except among the more sophisticated there

is no kissing. Van Berkel, who seems to have pirated from Warren, in talking of the Surinam Indians, says: Their bashfulness, especially that of the maids before strangers, gives to all their other perfections which are so openly exposed such an attractive grace and charm that those who come into contact with them have to practice no less than Joseph's chastity so as to arouse no forbidden passion. And up to now they have been so innocent that, besides every other friendliness with which they allure the menfolk, they have not learnt the sweetest and purest pleasure of kissing; but as there is now so much intercourse between them and Europeans, and they are quick-witted and docile by nature, it is conceivable that they will learn it thoroughly in time (BER, 131). Nevertheless, even at the present day, the comparatively civilized Surinam Carib regards kissing as a stupidity peculiar to the white race. "Were I to smear my mouth on that of a *woli* [woman], fui! that *would* be dirty!" has been seriously recorded of an Indian (PEN, I, 136). On the islands, when a woman was enceinte, a Carib might ask the father or mother for the child. In case it were a girl, and the mother had promised it to him, he would mark it with a red cross on the stomach. . . . When the girl was 7 or 8 years old, he would begin to make her sleep with him, although he had other wives. The child might be a very near relation of his (PBR, 251). On the mainland it was customary with the Maquiritare (Carib stock) and some of the Puinabo to ask for the daughter at birth, and if this were delayed, to abandon her. In one case the child is said to have been abandoned in an ant's nest, whence it was subsequently rescued and cared for (Cr, 536). "Among some of the nations on the Orinoco, it was customary," says Gumilla, "when a boy was born, to have a look around and wait for the first little girl to appear and then to ask the parents for her, alleging that they ought to be helpmates, through having come into the world one in pursuit of the other. On that day the marriage would be settled, and as the youngster grew and began to use his bow and arrows, everything that came to his hands he took to the little girl, were it fish, birds, or fruits, a consideration (*tributo*) which he recognized and paid until the time arrived for her to be given him as wife (G, II, 285). Makusi may be betrothed by their parents from their earliest youth, in which case the young man is bound to serve his girl's elders until she develops into womanhood. But this betrothal is in no sense binding, though while it lasts the man shows her every attention, brings her beads, and the best that he can get from the chase. When she becomes his wife, he takes her where he intends settling, and then his will is hers. But before he can take his wife home, he must give some proof that he is entitled to the name of a man (SR, II, 316).

Such proofs are referred to again in section 884. The parents of the Warrau girl, while still at a very early age, choose a bridegroom and hand her over to him at a later period without any further festivity. But from the day on which the girl has been betrothed to him, the boy must work for her parents until he arrives at manhood, in the meantime paying her every regard and attention in the way of giving her beads and the best of what he hunts. Arrived at manhood, he takes her to where inclination has led him to build a house (SR, I, 164). Among the Arawak, marriages are frequently contracted by the parents for their children when infants. In this case the young man is bound to assist the family of his wife until she arrives at puberty. He then takes her where he pleases and establishes his own household (HiC, 228). With these same people, if the girl is still so young that the bridegroom has to wait some years for her, the stepfather will in the meantime give him a widow or some older unmarried woman out of the family who, after the marriage with the real bride, returns with her in the relation of a servant (SR, II, 459). Cayenne Indian boys might marry their cousins german (who were considered their own by right of birth, as among the island Carib), often when two or three years of age. In the meantime they take another woman, whom they send away when the young cousin has become big enough to sleep with her husband (PBA, 223). A father possesses such authority over his own children that they must give their hand where he pleases, the girls being entirely under his control, even to a certain extent after marriage. Capt. Quio, as Dance remarks, had given his child to an Indian, but having had a quarrel with him, he ordered the child home. He next gave her to another, and a short time after, a drunken quarrel and fight ensuing, he deprived his pugnacious son-in-law of the girl. The third husband was abandoned because, as the captain affirmed, he was too lazy to work. This may have meant, however, that the man objected to work for the sole benefit of another man (Da, 106). On the other hand, it may happen that the young benedict is himself averse to the girl bride that has been forced upon him. Thus Schomburgk refers to the case of a young Makusi who, to judge from appearance and size, could scarcely have completed his thirteenth year . . . it appeared on inquiry that he had been lately married, much against his own will, though in deference to the wishes of his relations, and was anxious to join this traveler's expedition to escape from his bride (ScF, 194).

869. Men may make their own choice and demand for a wife. Thus with the present-day Pomeroon district Arawak, if a man wants to take over a girl for a wife he camps in the same house or

next door to her's for some two or three nights before. It may be after a *paiwarri* feast, when he will stay on for a day or two if he happens to have an eye on the daughter of the house. As soon as the *dorakuara* sings of a morning, which is in the very early dawn, he will go over to the father's hammock, wake him, and say he wishes to have a talk. The old man immediately picks up a cigarette, leans out of his hammock to fan up the fire underneath, lights his smoke, and is all attention. "What is it?" he will say. The young man then tells him that he likes his daughter and wants to know if he can have her; he also inquires whether he would like him for son-in-law, and ends by saying that, although he may not be able to keep his daughter and future wife exactly as the old man would like, he will try his best to please him in every respect. At last the father of the girl talks somewhat as follows: "I can not give you an answer until I hear from the girl and her mother; if the girl likes you, you will know for yourself, and I can not refuse you. But you can come again in a day or two," the time depending upon the distance of the proposed son-in-law's house. At the end of the time appointed the young man returns, but leaves his hammock at the water side or on the pathway. If the girl goes to fetch and bring this in he knows that his prospects are favorable, any doubt being clinched by the father telling her to give the young man cassava, pepper-pot, *beltiri*, or anything else that may be going. The young woman joins him in his hammock that very same night. After a few days the bridegroom may take his new wife on a visit to his mother's, but he soon returns to his father-in-law's place, where he takes up his permanent abode.

"Among the Makusi, as with the Warrau and Waika [*Akawai*]," says Schomburgk, "a man may ask a father for his daughter, and if he is well known as a warrior, hunter, or fisherman, he is certain of being accepted. This being the case, he removes all his property to his father-in-law's hut and devotes all his attention to him—hunts, fishes, and clears a field for him. If he complains of the exertion or does not appear energetic enough for his father-in-law, the latter will get rid of him with a word or two of thanks, etc." (SR, II, 316).

870. Among the nations of the Orinoco, and to the westward of it, the practice of making a temporary exchange of wives for a limited time was in vogue. At the expiration of the period agreed upon they are received back without the smallest objection being raised on either side (FD, 55). So, also, there is Gumilla's evidence. By mutual contract they will exchange their wives for a definite number of months; and the day of settlement over, each woman returns to her husband's house (G, I, 133).

871. Marriage by purchase, either in the shape of presents, work done, etc., was of common usage. Thus, in one thing there is more or less agreement among all the (Orinoco) nations, and that is their daughters are salable, that the bridegroom must pay the parents for the trouble taken in rearing them, and also for the solicitude and care with which they will henceforth work for their husbands (G, II, 284). By way of business it is distinctly agreed how much the bridegroom has to pay for the bride. This settled, the bargain is complete. If she is old enough he takes her away. Otherwise from that time forth the obligation rests on him of getting food for her. When he who asks for the marriageable girl is a man already possessing another or other wives, the consent of the girl's parents is rendered very difficult to obtain and is only overcome by an increase in the payment (G, II, 286). By whatever means the Warrau may have secured his first wife, his second, third, and fourth ones are obtained by presents (i. e., purchase). If the wife is old, an event which usually already takes place at 20 years of age, the man looks out for another from the little girls of 7 and 8 years of age. He hands the child over to the eldest wife for instruction, who teaches her the household duties until such time as she enters upon all the rights and cares of a married woman (SR, I, 164). Aiyukanti, the Makusi, had bought Baru of Pirara as a child in order that upon her entrance into womanhood he might have her as his second wife (SR, II, 141). So also among the Carib the male relations of the women would sometimes demand payment before they would consent to give them in marriage, even when the woman was a widow, and no longer very young . . . Brett tells the story of an old Carib father coming to claim compensation from his son-in-law for the loss of his daughter's services and of his subsequent claim for the child. The unwritten law of Carib usage was decidedly in the old man's favor and he received compensation for that child. For each succeeding birth he could, if he chose, reappear like an unquiet spirit, make a similar demand, and be supported therein by the custom of his nation (Br, 353-354).

872. With the Island Carib, when there happened to be among the female prisoners of war any that they liked, they made them their wives, but though the children born of them were free, yet were the mothers, for their part, still accounted slaves (RO, 545). Among the Uaupes River Indians there is no particular ceremony at marriage, except that of always carrying away the girl by force or making a show of doing so, even when she and her parents are quite willing (ARW, 346).

873. Girls may be offered to a man by their father, mother, or by themselves. Among the Arawak of the Moruca, if a father wants some celebrated person as husband for his daughter, he lets her place

food before him during the course of a visit. If he eats of it, the marriage is concluded; if not, the father knows that their wishes do not correspond (SR, II, 497). But with the Island Carib there were occasionally circumstances when the young man dared not refuse the girl so offered him. Thus, when they returned with success from their wars. . . the captain gave an account of the success of their expedition, and commended the generosity and gallantry of those that had behaved themselves valiantly. . . It was ordinarily at the end of that discourse that fathers of families who had marriageable daughters took occasion to present them for wives to those among the young men whose performances they had heard so much celebrated and whose courage and undauntedness in fighting had been so highly commended. There was an emulation among them who should get such for their sons-in-law; and he who had killed most enemies had much ado that day to escape with one wife, so many would there be proffered to him; but cowards and persons of no worth were wanted by none, for, to be married among them there was a necessity of being courageous. . . Happy did the father think himself. . . who could first approach and seize about the body some one of those valorous sons-in-law whom the captain had commended, for there was nothing to be expected for that time by him that came next; and the marriage was concluded as soon as the other had said to the young man, "I bestow my daughter on thee for thy wife." The like expression from a mother was effectual. And the young man dared not refuse the daughter when she was thus presented to him; but it was requisite that, whether she were handsome or unhandsome, he took her to wife (RO, 545-546). In Cayenne there is Barrère's evidence that most commonly it was the women who made the first advances for the boys. The mothers especially choose the young men who will suit their daughters best; and if the girls have lost their mothers before arriving at marriageable age, the nearest relative looks after this for them. The acceptance of food, etc., by the man from the girl is evidence of his agreement to the proposal (PBA, 220).

874. Both on the islands and on the mainland, certainly in Cayenne (PBA, 223), it was customary for the Carib to marry their cousins german as a matter of right. Thus, they have a privilege to take all their cousins german, and have no more to say than that they take them for their wives; for they are naturally reserved for them, and they may carry them to their houses without any other ceremony, and then they are accounted their lawful wives (RO, 544). When it happens that anyone among them hath no cousins german, or that having stayed too long ere they took them to wife, their friends have disposed of them to others, they may now marry such as are

not of any kin to them. But it is requisite that they demand them of their fathers and mothers, and as soon as the father or mother hath granted their request, they are their wives, and they carry them to their own habitations (RO, 545). Fermin also speaks of the Surinam Indians commonly taking to wife their nearest relative—cousin or niece (FE, 79).

875. It is doubtful whether the parties immediately concerned ever voluntarily entered into permanent sexual union without at least the consent of the woman's parent or parents. With the Warrau, for instance, in the absence of betrothal by the elders, the young people follow their own inclination. If the parents' wishes coincide with those of the suitor, the latter makes them either a present, or works for them, according to the accepted value of the bride, for a longer or shorter period. This period elapsed, the young married man clears a field and hands it over to his wife, who henceforth works in it (SR, I, 164). So among the Arawak, young men and women who are free, at a more advanced age, consult their inclinations without any ceremony beyond the mere permission of the parent, which is never withheld but on account of family feuds (HiC, 228), or consanguinity.

876. As to the degree of consanguinity discoverable in their sexual relationships, this appears to vary greatly in the different tribes. "Unlike our families," says Brett, "these [Arawak] all descend in the female line, and no individual of either sex is allowed to marry another of the same family name. Thus, a woman of the Siwidi family bears the same name as her mother, but neither her father nor her husband can be of that family. Her children and the children of her daughters will also be called Siwidi, but both her sons and daughters are prohibited from an alliance with any individual bearing the same name, though they may marry into the family of their father if they choose" (Br, 98). That this arrangement neither checks nor prevents consanguinity is easy to recognize, for, according to it, a woman can cohabit with her father's brother, but not with her mother's brother, or she can live with her cousin on her father's side, but not with the cousin on her mother's. With the Makusi, where descent was likewise claimed through the mother (SR, II, 314), almost the very opposite rules would seem to have been enforced. For here the uncle on the father's side can not marry his niece, because she is regarded as a relation next in degree to his brothers and sisters; he is called "father" also. On the other hand, he is permitted to bind himself to the daughter of his sister, the wife of his dead brother, or his stepmother when the father is dead. A Taurepang (Arekuna) can not live with his mother's sister's daughter, but he can with his mother's brother's daughter; also with

his father's brother's and father's sister's daughter. [Of the Pioje on the Napo, a widow often takes her son to replace the deceased husband and a widower his daughter upon the death of his first wife (AS, 196).] On the Orinoco there is Gumilla's authority for the want of uniformity in the way consanguinity is regarded in connection with permanent sexual unions. Thus, notwithstanding what has been said, he continues, some of these nations do not marry within the first nor second degree of consanguinity. The Betoya particularly exceed other nations in this respect, in that they do not intermarry until the fifth degree is passed; but there are other Indians, like the Carib and Chiricoa, who pay little or no regard to this (G, II, 290). Among the Island Carib were some who marry their own daughters (PBR, 239-240, 351); some a mother and a daughter; others, two sisters (PBA, 351). The marriage of father and daughter is, however, denied (RO, 549). In speaking of the Apaläi of the Parou River, Cayenne, Crévaux mentions how the youngest of the four wives called Papoula (Sun) qualifies Azaouri as much as father or husband. The unions between relatives of the first degree are not very rare among all the Guianese Indians (Cr, 304). So also with the Oyampi of Cayenne, incest between father and daughter, son with mother, brother with sister, is common (Cou, II, 346). If a Roucouyenne marries a woman (widow), she already having daughters, he becomes the spouse not only of the woman but also of her children (Cr, 241).

877. Except in the case of the Arawak—and even that is incomplete—but little is known of the social and family relationships of any of the Guiana Indian tribes. It was Hilhouse who first drew up a list of Arawak family names, a list which was subsequently supplemented by Im Thurn (IT, 176), and drew attention to the caste of blood being derived from the mother (HiC, 228). The different family names or families of the Arawak are known as bukurukuya or bibitaddu, and if one were traveling in "foreign parts" among other members of the same tribe, he would be asked to which family he belonged. If of their own, he would be treated as one of the family. Bernau makes the assertion, which is neither noted nor even suggested elsewhere, that they are able to recognize each other as members of the same family by certain marks and figures tattooed on their faces when young and colored with the lana (BE, 29). While little attention is paid nowadays to these distinctions, a large number of the collective family names are still remembered. The following list includes some of those met with among the Demerara and Pomeroon River Arawak. It gives the name of the object, etc., whence the name is derived (*a*), its meaning

(*b*), the name itself (*c*), together with that of its individual male (*d*), and female (*e*) members:

(<i>a</i>)	(<i>b</i>)	(<i>c</i>)	(<i>d</i>)	(<i>e</i>)
Kuraufudu	grass roots	Kuraufu-na	-di	-du
Onishidu	rain-head	Onishi-na	-di	-du
Kuyuruntu	species of deer	Kuyurun-tuno	-ti	-tu
Haritu	wild plantain	Hari-tuno	-ti	-tu
Haiawa	incense tree	Haiawaka-na	-di	-du
Urali	poison bush	Uralika-na	-di	-du
Dakama	dakama tree	Dakamaka-na	-di	-du
Ebeswadu	?caterpillar	Ebeswa-na	-di	-du
Hariti	black grasshopper	Hariti-no	-di	-du
Wariru	yellow pineapple	Wariruka-na	-di	-du
Kabuli	large white-winged ant	Kabulika-na	-di	-du
Mibi	vine-rope	Mibika-na	-di	-du
Dahatsha	pepper tree	Dahatshaka-na	-di	-du
Turu	туру palm	Turuka-na	-di	-du
Barakata	armadillo	Barakataka-na	-di	-du
Harubu	a plant	Harubunaka-na	-di	-du
Jimaridu	small canary-like bird	Jimari-duno	-di	-du
Kurubadu	?	Kuruba-duno	-di	-du
Aramakaitu	?	Aramakai-tuno	-ti	-tu

I have made personal inquiry among Carib (sec. 879), Warrau (sec. 880), Akawai, Makusi, Patamona, Taurepang, and Wapishana and can find nothing corresponding with these so-called family names of the Arawak. Indeed, I am very much inclined to the belief that the connection between family name and marriage restriction (sec. 876) among this particular tribe is either of comparatively modern origin and has been derived since their contact with Europeans, an association that has been specially well established and close, or else is a matter that so far is not thoroughly understood and requires further elucidation.

878. The following are the Arawak family relationship names met with at the present day on the Pomeroon:

A woman will call her—	
mother-in-law	dakuru.
husband	derichi.
older sister	datellato.
younger sister	daukito, lo-lo.
older brother	be-be.
younger brother	dadi kidi, lo-lo, or satchi.

A man or woman will call his or her—

mother	te-te.
mother's or father's mother	te-te hebero (old).
father	a-wá.
mother's or father's father	awa hebéli (old).
father's or mother's sister	dai-yebuato.
stepmother	dai-yebuato.
father's or mother's brother	dadai-enchi.
stepfather	date-buachi.
cousin (mother's or father's side, male or female)	bebe.
daughter or son's daughter	dallikento.
daughter or son's son	dallikenchi.
son or daughter	daichi, dasa.
brother's or sister's daughter	da wonto.
brother's or sister's son	da wonchi.
stepson	dai-ite-boachi.
stepdaughter	datto boáto

A man will call his—

mother-in-law	dammakutu.
wife	daraito.
older sister	dayudato.
younger sister	dadikido, lo-lo.
older brother	dabukechi.
younger brother	dahokichi.

A man will call his mother's brother's wife daiyukato. She will call him dai-chi-ki-chi.

879. Among the Carib Islanders the uncles and aunts—as many as are of the collateral line—are called fathers and mothers by their nephews. . . . All the male cousins are also called brothers and all the female cousins sisters, but between male cousin and female cousin the former calls the latter youëilleri; that is to say properly, my female, for, naturally, among them the female cousins become wives to the male cousins (RO, 451). An old Pomeroon Carib gave me Turewi-o and Muru-wa as the only two alleged group names of his tribe that he could remember. While ignorant of their meaning or interpretation he assured me that they had nothing to do with sexual restrictions. Certain old Surinam Carib men and women, besides their own name, bear those of their grandparents (PEN, I, 161). Granted that they reckoned descent in the female line, this is intelligible.

880. The only information obtainable in this connection with regard to the Pomeroon Warrau is that, according to John Coxall, the Moruca River Warrau captain, they name themselves after the creeks on the Orinoco watershed, from where they are believed to have come; é. g., Orowa-arau (noise of sea-breakers, creek), Kaiwaha-arau (dry wood creek), Noi-arau (troolie-seed, creek),

He-ubassa-arau (flat-quartz, creek), Winnikinni-arau, Maresa-arau, Mawanabu-arau, etc. Here also this grouping had no relation with regulating sexual unions.

881. There would appear to be some intimate relationship between an individual and his personal name of such nature that the very mention of it in his presence would be fraught with serious consequences. The name is deemed to be part and parcel of the individual, and the mention of it under those circumstances would put him in the power, as it were, of the person mentioning it. It is kept strictly secret and is known only to the family relatives and friends and to the piaiman. Even among family relatives, according to age and sex, one will address another as brother, sister, father, mother, son, or daughter, etc., or will speak of him or her as the father or mother, etc., of such an one. The mother addresses her child as *mami* (my child), and other children as suckling, missy, etc. One can never discover an Indian's real personal name; he never divulges it, nor is he ever called by it. He is also known by some nickname or name of distinction for his prowess in war, hunting, or fishing (SR, II, 324). Thus, the greatest demonstration of trust that an Indian can show a white man or Negro is to tell him his name. Frequently he clinches the business with the remark "My name is *Wokelu*," i. e., man (PEN, I, 160). The same rule applied to both mainland (KG, I, 184; II, 147) and Island Indians. Among the latter, if they wished to specialize they would speak half the name, e. g., Mala, instead of saying Mala-Kaali, and Hiba for Hiba-lomon (RO, 451). [I can not refrain from mentioning here that in the case of certain animals the Arawak use different names according as they speak of them by day or by night. Thus, during the working hours a jaguar is *aróá*, but when darkness sets in it is *kabadaro* (claws). Similarly, *kamudu*, a boa constrictor, becomes *akkara* (a coil); *yéshi*, an armadillo, is paraphrased into *andajika* (*anda*, close; *tejika*, ear, i. e., ears close together), and so on. I know of nothing corresponding to this, however, in the case of personal names.] So also when dead, the name of the deceased must not be mentioned (WER, VI, sec. 263).

Among the Pomeroon Arawak the mother always gives the "baby" name first to her child, independently of the piaí, who bestows the personal (secret) name subsequently. It is said that friends, brothers, and sisters may call them by these names, which stick to them throughout life, but it should be borne in mind that these Arawak have been in closer contact with Europeans than any of the other tribes. The following are some of the baby names given by the mother at birth:

Girls' names.	Boys' names.
Satu, darling.	Korelyali, baby boy.
Kakushika, big eyes.	
Korelyaro, baby girl.	
Kai-inasaro, big buttocks.	Kai-inasali, big buttocks.
Sato-bara, pretty hair.	Sachibara, pretty hair.
Kuroshiro, reddish hair.	Kurashili, reddish hair.
Kabararo, plenty of hair.	Kabarali, plenty of hair.
Kakarishiri, curly hair.	Kakarishili, curly hair.
Irihibaro, dark hair.	Irihibali, dark hair.
Ilihiro, dark girl.	Iihili, dark boy.
Natukoro, sp. of pretty flower.	Deringko, sp. of parrot.
Kuyari, toucan.	Wé-shi, sp. of little fish.
Durakuaro, bird (<i>Odontophorus</i>).	

The name bestowed subsequently in this tribe by the *piai* takes place about the period when the child begins to creep; he asks the spirit in the *maraka* (rattle) to give the name. "An offering of considerable value is necessary on this occasion, as according to the fee given to propitiate the *piaiman* is the virtue of the incantations pronounced. An unnamed Indian is thought to be the certain victim of the first sickness or misfortune that he may encounter. Accordingly, only the very poorest of them are without names" (HiC, 229). At the present time it would seem that the *piai* gives a name only if he has been called in to attend a child when sick; under such circumstances he will say that he has dreamed that the child requires a name, and the parents accordingly ask him to give one. Such names are given with regard to the personal appearance, to birds or other animals, to tobacco (e. g., Yuri-niro, Yuri-tukoro = tobacco flower), after the *piai's* kickshaws, etc. (e. g., Shibari, "stone," Kalliko-yang, "crystal," Wara-maraka = a name derived from his rattle), or "after some quality or title." With the Makusi it was either the grandmother or grandfather, on the conclusion of the *couvade*, who gave the infant one of the names customary in the family (SR, II, 315). Among the Tukano it is the father, under similar circumstances, who gives the name, generally that of an animal (KG, I, 313). In the olden days with the Surinam Carib it was probably only the *piaiman* who presented the child with its personal one. At the present time the family folk foregather. "Look!" calls out one, "how its eye resembles a flower." "No!" says another, "his nose is as crooked as a little eagle's." "His chin is like a tobacco leaf" is the grandmother's opinion. "Yes," assents the father, "the resemblance is striking," and thus his name is Tamualu-yekesalu, i. e., Tobacco-leaf little one (PEN, I, 160). On the islands the Carib do not bestow names immediately after birth, but wait for 12 or 15 days, when they call in a

man and woman, who take the place of sponsors, and pierce the child's underlip, nostril. . . . The majority of the names which the Carib impose on their children are taken from their ancestors or from different trees which grow on the islands, or also from something that has happened to the father at the time of his wife's pregnancy, or during her lying-in (RO, 552-553). The circumstances varied under which the name already given might be altered or added to (WER, VI, 263-266 A). Thus, a convalescent patient might start life afresh with a new name. Some Trio have two names, one reserved for friends, the other for strangers. De Goeje says that the Oyana might have two names, one for addressing the person and the other for referring to him when absent (GO, 26). Among the Surinam Carib some of the old men and women have travel names, which are used only on a journey. Thus, says Penard, one of our friends is called Atarwa, but his travel name is Aliensi, and his baptismal name Joseph. This *nom de voyage* serves especially to trick the evil spirits (sec. 791), for which of these gentry would ever think of looking for the practically unknown real Atarwa under the pseudonym of Aliensi, a name universally known? And as far as the baptismal name is concerned anyone may know this, because the Evil One is powerless against the baptism of the whites! (PEN, I, 161). On the Carib Islands the names given to the male children shortly after birth were changed when old enough to be received into the rank of warriors, or if they had borne themselves bravely in battle and had killed an Arawak chief they took his name as a mark of honor (RO, 552-553). Both on the islands and on the mainland names were exchanged in testimony of great affection and inviolable friendship (RO, 513): "When they want to make friends they ask for our names and give us theirs. To show affection and friendship they want us to exchange names" (PBR, 237-238). In Porto Rico "Juan Ponce de Leon, in fact, was received into the bosom of the family, and the cacique exchanged names with him, which is the Indian pledge of perpetual amity" (WI, 778). With the present-day Arawak and Warrau, among members of the same sex, it is of common occurrence, as proof of friendship and affection, not to exchange names but for the younger to adopt the name of the older one (sec. 807). The Island Carib have also in their drinking bouts or on occasions of public rejoicing some one appointed to give them a new name, whom they address after having drunk well: "I wish to be named. Name me!" one will say, whereupon the other immediately satisfies him and is rewarded with a present—a quartz-crystal or other article (RO, 552-553; WER, VI, sec. 265).

882. Speaking of the Carib Islanders, Father de la Borde says: "An old man sometimes takes a young girl and an old woman

without teeth a young man—they have a great liking for the old witches" (PBR, 251). A similar trait has been reported by Gumilla from the Orinoco Otomac: "When their young men arrive at a marriageable age they hand over to them the oldest widows in the place for wives, and when they are left widowers they give them a young girl. The principal reason which the captains give in approval, and for the utility, of this custom I am unable to state for decency's sake. The second reason is sensible enough. To marry a boy and a girl is to join a pair of fools who don't know how to conduct themselves, whereas by marrying the young man to the old woman she teaches him as to how the house has to be managed and how he must work to live. When he becomes a widower and marries a young girl, she benefits by his instructions" (G, I, 175). Examples of the custom of taking an old woman for a first wife and contemporaneously a comparatively young one for a second are found recorded throughout the Guianas. The latter may be but a child of 6 or 7, perhaps younger, who subserves the former in all domestic employments until the time of puberty, when she also will cohabit with the husband. As might have been expected, and as is seen among other savage races, the net result of the older women being handed over to the younger men is that the older men are generally blessed with the younger wives.

883. Wallace says of the Uaupes River Indians that they do not often marry with relations or even neighbors, preferring those from a distance or even from other tribes (ARW, 346).

884. Both Crévaux and De Goeje (GO, 18) report a certain ordeal to be undergone by the male aspirants for marriage at the Maraké ceremony among the Oyana and Apaläi (Cr, 307) of Cayenne. This consists in the main of submitting without a murmur to the stinging of certain ants or wasps, for which purpose the insects are held in frames (pl. 180 B) of bizarre shape, fringed with feathers, and representing crabs, bush-spirits, fish, quadrupeds, and birds (GO, pl. II; GOE, pl. III). The victims invariably faint and are carried to their hammock in a shed, where they have to remain 15 days, eating only a little dry cassava and small fish roasted on ashes (Cr, 245-250). Other tribes have different methods for demonstrating the fitness of the man for marriage. Thus with the Makusi, as with the Warrau and Waika, he must, within a given period, clear a certain measured piece of land to serve afterwards as a provision field (SR, II, 316). The same holds good among the Arawak as one of the preliminary conditions, others being the shooting of so many bush hog, and, most important of all among these people, a special test of skill in shooting an arrow into the woodpecker's nest (WER, VI, sec. 277). A similar target test is met with among the Uacarra (Ara-

wak stock) of the River Apaporis (ARW, 346), and also among the Apaläi (Carib stock), Cayenne. In the latter case it takes the following form: With their backs turned, the candidates for marriage have to throw cassava pellets at a piece of board on which a circle has been traced, and those who fail to hit it three times running are subjected to another ant and wasp stinging (Cr, 307). [For further information re puberty and prenuptial ordeals for both sexes consult WER, VI, sec. 267-278A.]

885. Women may have corresponding proofs to show of their fitness for permanent sexual union, first and foremost of which would be the advent of puberty, i. e., the marriageable state, the first signs of which, by the Makusi and others, were met with a whipping (WER, VI, sec. 271). With the present-day Pomeroun, Arawak, Warrau, and sophisticated Carib, the general practice is for the parties not to "marry" until the girl has given proof of her child-bearing capacity by becoming pregnant. An Indian requires his wife mainly for this purpose, being always able to satisfy his lust elsewhere. In olden times the Guayquirie of the Orinoco before marrying their daughters are said to have subjected them to a 40 days' fast. Three fruits of the Murichi [*Mauritia* palm] and three ounces of cassava with a pitcher of water was their daily ration, with the result that on the day of the nuptials they appeared to be more like corpses than brides. The reason for this semistarvation was given by a cacique to Gumilla as follows: "Our ancestors observed that wherever women, at their monthly periods, trod, everything withered, and if any man trod where they had placed their feet his legs swelled. Having studied the remedy, they ordered that we should starve our women so that their bodies might not contain poison" (G, I, 159). Similar practices were observed with the Island Carib: When the girl became marriageable she was made to fast in her hammock for 10 days on dry cassava and a little oviku (sec. 260). If the poor girl, pressed by hunger, should, during the night, take a piece of cassava, she was sure to be a sluggard and not likely to work (PBR, 250).

886. With regard to marriage ceremonies, the statement of Brett that none are to be observed in their heathen state (Br, 101) is in strange contrast to that of Gumilla, who talks of having seen so many in even one particular tribe that it would require pages to describe them (G, I, 159). Speaking in his day of the coastal country westward of the Guianas, Depons says that dancing and drunkenness constitute the whole ceremony of marriage. The relations on both sides are invited on such occasions. The men bring along with them materials proper to build a hut for the young pair and the females present them with fish, fruit, bread, and drink. The former chant

couplets to the bridegroom and the latter to the bride. As soon as it becomes dark the young wife is presented to her husband, which concludes the ceremony. . . . The same ceremonies prevail among all the tribes inhabiting the banks of the Orinoco. They merely differ with respect to the kind of couplets chanted by the old women to the bride (FD, 54). Gumilla supplies us with a few more particulars concerning the Orinoco, Guayquirie, and Mapoye, among whom it would appear that several brides were married at the same time. The evening and night before the nuptials is spent in all anointing and feathering themselves. A large number of old women apply themselves specially to decorating the brides with feathers. The cacique is the master of the ceremonies. From his seat he gives the necessary directions, etc. As soon as day breaks there comes from the bush close at hand a dancing party, with flutes and kettledrums, which circuits backward and forward around the house and houses of the brides, from whence an old woman presently emerges with a plate of food and gives it to one of the dancers. The latter then all rush at top speed back to the bush, and, scattering the plate and food, one of them will say: "Here, you *perro demonio*, take this food and don't come and upset our entertainment" (G, I, 161). This ceremony completed, the dancers put on wreaths of flowers; a nosegay in the left hand and the timbrels (*sonaja*) in the right; to the accompaniment of flutes they return dancing to the door of the bride, where another set of dancers in other decorations are already standing in a line. These latter are provided with flutes. . . . In truth these flutes are in pitch and have a sweet consonance when played in pairs, not less than when two violins, one for tenor and the other for contralto, are played. The bridegrooms, feathered in a particular fashion, join in the midst of this dance. They are able to frolic about nimbly because they have not been starved like the brides (sec. 885). The latter now emerge in sorry plight. The matrons who have been feathering them have not let them sleep the whole night; and what causes greater rancor is that each bride is accompanied by a frightful old woman on either side of her. These old hags already sing and cry for very truth, "Ah, my girl, if you only knew what troubles your husband will bring you, if you only knew what the pains of travail are, you would not get married," and in this manner, with the men dancing, the old women weeping, and the brides out of their wits, they make the round of the whole village (G, I, 161). Only among the Betoya and their various branches (*capitanias*) did Gumilla observe the parents express any interest in the welfare of the brides when handing them over, somewhat as follows: The father-in-law asked

the bridegroom, "Will you take care of her?" to which the young man replied, "I will take very good care of her" (G, II, 286). With the Berbice River Arawak, however, parental advice seems to have been offered to both parties. Thus, says Van Berkel, although the Indians have neither guardians of the peace (*politie*) nor laws, they nevertheless marry one another as well as civilized nations. When the young people have a mutual understanding, and the parents on both sides are in agreement with the marriage, the blood relations assemble together and one [of the kinsmen] entering into conversation with the bridegroom, reminds him not to run after any other [woman], but to mind his wife, to be diligent, and cut a provision field, to go fishing and hunting daily for his kitchen, to help catch crab, etc. And the bride [is warned] that she must have nothing to do with anyone else, to show becoming loyalty and respect to her husband, to set food and drink before him always when he gets home, and not to play with the children any more. As a matter of fact, they are likely to fail in this respect, because the girls marry at the age of 11 or 12, when one knows it is rare to find that amount of composure which marriage well requires (BER, 22).

887. The supplying and acceptance of the food is a subject of common mention in the description of the marriage ceremonies. In our own colony Bernau speaks of a feast being given alternately by the bride and bridegroom (BE, 59). "Among the Moruca River Arawak," writes Schomburgk, "the swain, having chosen a girl outside of his own caste, makes sure beforehand, through the girl's relatives, that he will not meet with a refusal. Knowing this, he visits her parents, tells them how poor he is, that he has no wife, etc., which the father in a number of pretty phrases indorses. If at the conclusion of these preliminaries the girl places something to eat before the young man, so is consent promised, the suitor eats what is placed in front of him, and the marriage is concluded. In the evening the young girl's hammock is slung by her mother close to that of her future husband" (SR, II, 479). In Surinam the marriage ceremony is very simple. It is sufficient for the man anxious to marry to take the girl all the game and fish that he has caught during the day. If she accepts this present it is a sign that she is willing to have him. It is then her business to prepare the supper and bring it to him in his carbet, and then retire to her own home. She returns, however, the next day in order to fix a date for the celebration of the marriage. In the meantime the future spouse, with his relatives and principal friends, makes some big hunting and fishing expeditions. The wedding day having arrived, the bridegroom goes to seek his bride, and tells her, "I have chosen you for my wife." This suffices for her to follow him imme-

diately (FE, 78). This is practically confirmed by Stedman: The ceremony consists simply of the young man offering a quantity of game and fish of his own catching, when, if she accepts, he next proposes the question, "Will you be my wife?" If she answers in the affirmative the matter is settled, and the nuptials celebrated in a drunken feast, when a house and furniture is provided for the young couple (St, 1, 398). Bancroft also speaks of a house, with its furniture, being provided for the newly-married couple contiguous to that of the father's (BA, 321), though as often as not it would seem that the bridegroom had to build it for himself. In Cavenne, as soon as a girl has cast her eyes at an Indian she will offer him a drink and firewood to light near his hammock. If he refuses the offer it means that he does not want her. If he accepts, marriage is considered concluded. That same night the girl slings her hammock close to his, they sleep together, and from that time forward she is his wife (PBA, 220).

888. Besides the acceptance of food there are traces of certain customs connected with the hair as symbolic of consent or consummation of marriage. Thus, it is said of the Carib Islanders that some, without saying a word, go and lie down near the girl that pleases them best, and the mother acquaints her daughter that it is time to get married, though, often, she is only 12 years of age. The next morning she combs her master's hair before the others, and brings him cassava. Through this public act, their wedding is declared (PBR, 251). In Cayenne, the true Nourague . . . when they want to marry, and everything is agreed upon, both parties throw one of their hairs into the air . . . and sling their hammock under a tree, where they proceed to consummate the marriage (PBA, 221).

889. When an Indian marries he takes up his quarters close to his father-in-law, or may occupy the same house. He becomes part and parcel of his wife's family. According to the Indian rules of marriage, the young husband is bound to live in the same settlement with his wife's parents (Da, 263). The wife's father expects the bridegroom to work for him in clearing the forest and in other things, and the young people often remain with him until an increasing family render a separate establishment necessary (Br, 101). This also was the rule on the islands among the Carib. The woman continues to live in her father's house after the wedding and she enjoys more privileges than her husband, because she can speak to everybody, but he can not speak to the wife's relations without great caution, or when he finds them in liquor. They always shun such meeting (PBR, 251; RO, 545). Talking of the mainland, Brett says that the Carib woman is always in bondage to her male relations. To her father, brother, or hus-

band she is ever a slave, and seldom has any power in the disposal of herself. Her family claim authority over her even after they have given her in marriage (Br, 353). On the other hand, Schomburgk records that the Carib showed much more attention to their wives than he should have expected from what he had read. . . . The women appeared to be considered more as companions than slaves (ScG, 246). As has been already mentioned (sec. 868), the father can, in certain cases, take his daughter from her husband and dispose of her elsewhere. This, however, is rather exceptional, because the father will not willingly care to risk the loss of a son-in-law whose duty it is to maintain and support him in his old age. The old men regard their sons-in-law as servants to wait on them and from the time that their daughters are married have no more cause to work. The newly married Indian has to see to the plantation, the home, the hunting, and the fishing (PBA, 223).

890. From the rigid government exercised over them by the men the women appear to be somber and reserved. They commonly sit with their backs toward strangers and remain in profound silence while their husbands are present. In their absence they show less restraint and seem disposed to cheerfulness and vivacity. It is reckoned indecent in the man to caress or notice the women in public, and our practice in this respect appears to them highly contemptible; but the Arawak, when secluded from public observation, exhibits as sincere and unreserved an affection for his domestic relations as the more civilized of any nation (HiC, 231). The Indian woman (present-day Surinam Carib) is the servant, or rather slave, of her husband, although this is more imaginary than real. Nevertheless, she does the hardest work and carries the heaviest loads; and she often does this with a suckling on her back. Only in his presence or in that of his family folk may she speak to another man. Only when he has eaten may she venture to partake of something, so that when he is sick she sometimes hungers. All the money that she earns in making hammocks, pottery, etc., goes to the husband, who generally squanders it. . . . No wonder need be aroused at unhappy marriages and husbands ill-treating their wives, especially when they are drunk. But woe to the woman if she dare offer resistance or attempt to give her man a sound thrashing, because on his recovery she would receive double in return. And if a man allows himself to be led or ruled by his wife, he is regarded with the greatest contempt. On the other hand, many a couple are married in all honor and virtue, but we have still to find an Indian who does not regard his wife as his servant (PEN, I, 153, 154). With the Uaupes River Indians husband and wife rarely pass the whole night together in their hammock (Cou, II, 171), an occurrence which probably takes place among

other Guiana tribes more frequently than might be expected. It is said of the Island Carib that they never touched pregnant women (RO, 548). Schomburgk says he never witnessed a quarrel between man and wife while he was in the interior. On the coast, where they are debased by European vices and spirits, the Indian may be passionate and tyrannical in his conduct toward the woman, but not so among his own tribe (ScE, 173).

891. As with the Carib, a Warrau does not talk to his mother-in-law; but I have noticed the latter doing so at a distance in a lowered tone of voice, and with head turned in a different direction. She turns her face away whenever he passes anywhere near. Arawak have told me that "in the old days" their women used a large basket, under which, inverted, they would crouch and hide their heads on the approach of their son-in-law. How much or how little truth there is in this I can not say.

892. Polygamy was practiced throughout the length and breadth of the Guianas, including the islands. The number of wives among the island Carib was not limited . . . They had as many as they desired and could obtain (RO, 547). [In Cayenne] all were polygamous (PBA, 222). Among the Nourague and Acoqua, where there was one man to be found that had but one wife, there were six who had each of them two or three (GB, 27). [In Surinam] polygamy was admitted among them (St, 1, 384), though this was denied by Fermin, who explained its absence as due to the liberty the Indians had of separating themselves from their wives when they liked or ridding themselves of them and taking others on the instant (FE, 80); [in Demerara] it was universally allowed (BA, 319).

In his History of the Orinoco, Gumilla says: "Polygamy, handed down from father to son, is so constantly met with that there can not be the slightest doubt as to whether it is lawful or not. But, generally speaking, there are few who have many wives, not because they do not want them, but because they can not get them; or, granted they can get them, because they have not the wherewithal to pay the parents for them or because they do not care to complete the necessary tasks that have been already referred to (G, 11, 287). With the upper Rio Negro Indians men generally have but one wife, but there is no special limit, and many have two or three, and some of the chiefs more (ARW, 346). Among the majority of the tribes one finds Indians having two or three wives, generally sisters (Cou, 11, 405). Polygamy is common among the Arawak, and a chief often possesses as many as four or five wives (SR, 1, 227; 11, 460), while records of its occurrence among particular tribes, e. g., Wapishana, Warrau, Akawai (ScT, 41), Arekuna (EU, 292), Makusi (ScF, 200; SR, 1, 369) are repeatedly met with.

893. Several factors, singly or combined, would seem to have led to the practice of polygamy. Gumilla mentions that the Orinoco chiefs were accustomed to have, more by way of pomp and vanity than anything else, as many as 10 or 12 wives, and at times more. The Captain Yaguaria, chief of the Carib nation, a few years ago had as many as 30 wives, each one of a different nation (G, I, 135). We have the same authority for the statement that the caciques, captains, and certain vainglorious ones who excelled in bravery or in glibness, and eloquence of tongue, as well as their medicine men, were those who, either owing to their authority and valor or to their impositions and frauds, had two to three women. Some might have as many as eight and even more (G, II, 287). The larger number of wives held by the chiefs and medicos as compared with the common crowd is repeatedly noted elsewhere. The plurality of wives was also proportionately dependent upon the ability of the husband to support a larger or smaller household. Thus, of the Island Carib, some had six or seven wives in different places, and were it not that they had to feed them, they would have taken more (PBR, 251). Polygamy is allowed and practiced by all those [Arawak] who have the means of maintenance, etc. (HiC, 228). Each man takes as many wives as he can conveniently maintain (Pnk, I, 520). Those [Wapishana] who can maintain several women practice polygamy (ScT, 41), etc. Among remaining factors that have to be taken into consideration is the economic one of the value of woman's work and the number of women available. Gumilla, for instance, originally pointed out that careful observation of the circumstances [i. e., polygamy on the Orinoco] shows that this mustering (*agregar*) of so many women arises rather from the advantages accruing from their field work (and from feelings of pride and snobbery to be considered wealthy and popular men) than from any other less decent motive (G, II, 287). Schomburgk expressed the opinion that a plurality of wives was indulged in at Curutza as a consequence of the number of women [Wapishana or Pianogotto] far surpassing that of the men (ScF, 214). On the other hand, the field and other manual labor of the females may be of so arduous a nature as ultimately to tend toward a diminution in their numbers, and thus lead to a condition of affairs very much the reverse of polygamous and one which Von Humboldt did not fail to take notice of. It was this author who said that the whole weight of labor being supported by these unhappy women we must not be surprised if in some nations their number is extremely small. Where this happens a kind of polyandry is formed (AVH, II, 455).

894. The comparative frequency of the wives being sisters may perhaps indicate a condition of affairs met with among other races

of mankind where the husband has marital rights over his wife's sister or sisters, a primitive form of communal marriage. Records of this nature come from the Island Carib (PBR, 251), from the Bartica (Essequibo River) Arawak (BE, 108), from the Makusi (SR, II, 318), from the Wapishana (ScF, 214), and others. I myself have observed the custom still prevailing among the Pomeroon district Carib and Akawai. As already mentioned, Coudreau goes so far as to state that among the majority of the tribes one finds Indians having two or three wives, generally sisters (sec. 892). "The marriage of two sisters to the same husband," says Rev. Charles Dance, "has often been justified by the elder sister as a preventive to family jars and conjugal jealousies. 'Better,' she says, 'take my sister, who loves and will obey me, than take a stranger who will hate me'" (Da, 101).

895. The following picture of a polygamous household on the Orinoco is painted by Gumilla: As might be expected, quarrels are not wanting among the wives, although they do not live together in the one house, but each one has her separate habitation together with her children and her separate hearth. The fish which the husband gets is divided proportionately among all of them according to the children which each one has. When mealtime arrives they stretch the mat, which is his table, on the ground and each wife, after placing in front of him his plate of meat, his cassava cake, or caizu of maize, retires. Whether he eats or not, no one speaks to him. After the lapse of a sufficient time, each wife brings a drink of beer (*chicha*), which she places in front of him, and, this done, then retires to her hut to eat and drink with her children; and so strife is avoided. In the field a similar separation is arranged for. The husband divides the land, which he and his friends have cut into as many portions as he has wives, each woman sowing, cultivating, and looking after her own portion without meddling with the other's. Nevertheless, it is true that squabbles are not entirely wanting; e. g., over one having a better or bigger plot than another, over one wife's children stealing fruit from another wife's piece of land, etc. (G, II, 287). So also on the islands the Carib built a particular hut for every wife. They continued what time they pleased with her whom they fancied most, yet so as that the others conceived no jealousy thereat (RO, 544).

896. There is reason to believe that the first, generally the oldest, of the wives was specially intrusted with the performance of certain duties, the exercise of certain privileges and powers. On the upper Rio Negro she is never turned away, but remains the mistress of the house (ARW, 346). Similarly, among the Wapishana, etc., though the other wives may be young enough to be her daughters, and com-

parably far more attractive, the old hag will retain her position as head of the household (ScF, 214). According to Von Humboldt, a certain inequality in the rights of the women is sanctioned by the language of the Tamanac. The husband calls the second and third wives the companions of the first, and the first treats these companions as rivals and enemies (*ipucjatoje*), a term which truly expresses their position (AVH, II, 455). On the Berbice, Pinckard describes how the Indians commonly appoint the senior of their wives as a spy or guardian over the conduct of the others; but, as a spice of intrigue has found its way even into the wild woods, it is said that means have been found to convert the old duenna into the best channel of obtaining an introduction to the junior branches of the harem (Pnk, I, 520). Very commonly, however, one or more young girls are generally taken into the house, nominally as wives, but really rather to be taught their domestic duties by the old wife, so that when the latter dies or becomes perfectly useless, one of them may take her place (IT, 221-223). If the second, as is often the case, is but a child she will subserve the former in all domestic employments until the term of puberty . . . at which time she cohabits with the husband (BA, 319). Though polygamy is general among the Wapishana, Schomburgk makes mention of the fact that the children are well brought up and obedient (ScE, 166). The same author also notes an Indian, apparently Makusi, who had three wives and a progeny of eight children, with a prospect of more, as a rare instance of numerous children among natives who practice polygamy (ScF, 200).

897. There are variations observable in the disposal of the widows from her immolation with the deceased husband as recorded among the old-time Carib on the Orinoco (G, I, 201), or flagellation, etc., as on the Vichada (WER, VI, sec. 276), to her absolute freedom in the bestowal of her body and affections. Arawak widows have their hair cut on their husband's death and can not marry again until it has reached a definite length. During this period she remains devoid of all ornament and decoration, even of the usually worn cotton clothing (SR, I, 227). When this time has arrived, the husband's nearest relative [his brother] claims first right over her. If some one else wants her he must buy her from the first claimant, either with a gun, a corial, or some other object. If she marries anyone without the consent of the rightly authorized heirs, this is generally the cause for bloody feuds (SR, II, 460). Similarly with the Warrau, the widow and children become the property of the brother or nearest relative. If she rejects him, the provoked blood relatives revenge themselves by forcing their way into her house and giving her a very severe thrashing, after which she is free to live with whomsoever she pleases (SR,

11, 447). So with the Makusi, if the husband dies his wife and children are at the disposal of the eldest surviving brother, who may sell or kill them as he pleases (BE, 35). As is the case with the Pioje (a Betoya stock) of the Rio Napo where a widow often takes her son to replace the deceased husband [and a widower his daughter upon the death of his first wife] (AS, 196), so on the Orinoco among the Carib, the eldest son of the deceased inherited the marriageable widows (G, 11, 286). On the Berbice, Dance gives the example of an Indian, but unfortunately the tribe not mentioned, taking to wife his uncle's widow (Da, 107). On the Orinoco, upon an Otomac's death the captains would bestow the widow on a young man, while in other nations, without any interference on the part of their relatives, they just marry as may seem best to them (G, 11, 286). Dance is responsible for the statement of the Arawak entertaining the notion that a man is not bound to raise up seed to his wife's former husband and relates how he had some trouble once to suppress by threats of law the intention of an Indian to destroy the child to be born to another man whose wife he had seduced from her home to his (Da, 310).

898. Divorce is mentioned by Gumilla as having been in full force on the Orinoco, but, unfortunately, no particulars are furnished by him (G, 1, 119). Talking of the Makusi, Schomburgk states that the husband is later on free to get rid of his wife, even to sell her, but this only happens in very rare cases, because by nightfall she has already probably found a new man. If the couple have children, such a separation is extremely rare and can only be dependent on disloyalty (SR, 11, 316). Speaking of the British Guiana Indians generally, Im Thurn says that a complete and final separation between husband and wife may be made at the will of the former at any time before the birth of children. After that, if the husband goes away, as very rarely happens, it is considered not lawful separation, but desertion (IT, 222). Brown furnishes an interesting case from the Curiebrong River: He [the Indian] told William that he and his wife could not agree together and were going to separate, he having selected another girl in her place. This latter was of his own choosing, while his wife was given him by his parents, who now agreed to sanction the separation on the ground of nonagreement of the parties (BB, 229). In Cayenne, the man could send his wives away when he liked and leave them entirely forsaken. In case of repudiation, the fathers minded the children born to them (PBA, 222). (See Adultery, sec. 733.)

899. As Joest remarked in Surinam, the Carib woman must work extraordinarily hard. Besides her duties as mother, cook, washer, spinner, weaver, and beast of burden, she has to keep the cassava, banana, pepper, etc., trees and fields in order, while the remainder of her time is spent in finishing the pots and baskets (WJ, 84).

Coudreau has said of the Indians at the head of the upper Rio Branco that there is hardly any division of labor between the men and the women, because these also, and even often enough, shoot game and fish with bow and arrow (Cou, II, 398). Paradoxical as this may seem, both these statements are true in a sense, because, taking the Guianas throughout, it is very difficult to state what particular operations, practices, or duties are absolutely restricted to one or the other sex. Indeed, after a very careful survey of the whole question, it may be stated that with comparatively few exceptions there is hardly an art, trade, technic, or service that in its entirety can be claimed to be dependent absolutely upon the labor of one or other sex. Among such exceptions would be boat building, house construction, the manufacture and employment of fighting and hunting implements, etc., more or less the prerogative of the males, with field work, food preparation, beadwork, and pottery distinctive of the female. Even here the distinctiveness has sometimes to be qualified. Although I have never seen, heard, or read of a dugout or wood skin made by a woman, she will collect the spent ite-leaf bundles when the vessel is to be fired (sec. 793), or may take a share in the decoration of the paddle (sec. 799). Among the Carib Islanders the men built the houses, the women constructed the roofs (sec. 327). Makusi women execute the paintings on the hut walls, paddles, corials, and weapons (sec. 325). On the Upper Rio Branco women will shoot game and fish with bow and arrow (Cou, II, 398). On the Pomeroon they can poison fish equally as well as the sterner sex. If field work is to be done, the men have to fell all the larger timber before the women can begin. Hilhouse even speaks of a male Akawai helping with the planting (HiC, 235). As to carrying and cutting up of the food, custom differs widely (sec. 272). The husband may build the barbecue, but his wife will keep watch throughout the night lest the dogs should steal the meat that is being smoke-dried. It is true he makes the sugar mill, but she has all the hard work of pressing the cane therein. On the other hand, she alone will make all the drinks, the starch, flour, and the cassava. Occasionally it will be the men who drill, thread, and wear beads.

900. No hard and fast rule can be laid down as to the manufacture of basketry in its relation to the sexes. An article, e. g., the pegall, which is certainly only made by men in one district, say the Pomeroon, is just as surely made by women, even of the same tribe, in another. On the other hand there are undoubtedly cases where, owing to difficulties in design, in obtaining the necessary materials, in the limitations to which it may be applied, the making of a particular article may be restricted to the male worker. As far as possible, I have noted these in the chapter on mats, trays, and

baskets. At the present time, on the Pomeroon, the majority of the baskets are made by men—Arawak, Carib, Akawai, and Warrau—but many of them can be, and certainly are on occasion, manufactured by the women. Schomburgk speaks of the Warrau women, and I can confirm him, weaving baskets and mats (SR, I, 165). So again, in Surinam, Fermin is responsible for the statement that it is the females who make the baskets out of fine reeds, the pagales [pegalls] (FE, 61). Joest mentions the same thing from the Sar-ramacca River (WJ, 88-89), while on the Orinoco we have Gumilla saying that the chief occupation of the Otomac women is to weave mats (*esteras*), cloaks (*mantos*), large baskets, etc. (G, I, 170). On the Içana and Caiary-Uaupes, the larger plaited articles, baskets, sifters, etc., are made by the men, as a rule, hanging baskets also by the women (KG, II, 224).

901. Taking now the subject of hammock making in its relation to the sexes, it is interesting to note that in the old days on certain of the islands it was the Carib women who spun the cotton and the men who wove it into hammocks (RO, 507). The present-day cotton hammocks of the Pomeroon Carib are certainly woven only by the women. While throughout the whole of northwest Brazil rope making and string twisting is exclusively man's work, a Siusi (Arawak stock) girl of the Aiary was seen making a palm-thread hammock. Only women use the loom and special weaving apparatus (KG, II, 214). With the present-day Arawak, Carib, and Warrau of the Pomeroon district all rope, string, and hammock making of any material is usually woman's work, but only some 30 years ago it would seem that the men prepared and added the scale lines to the hammocks (II, 289). On the other hand, among certain of the Carib and Arawak stock, such as the Makusi and Patamona, not only do men assist in loom weaving (sec. 466), but in earlier days the men of the former tribe might use a loom solely on their own account (sec. 473). Men are said to have colored the hammocks otherwise made by women (sec. 478). It seems somewhat strange, unless explicable perhaps by the belief underlying the *couvade* (WER, VI, sec. 283), that the cotton baby slings should be manufactured mainly by men (sec. 483). Schomburgk noted among the Rupununi Makusi that the wooden benches (sec. 328) made by men were almost only used by women (SR, I, 359). I have not, however, been able to confirm this statement with the present-day folk.

902. In matters of domestic service, though usually devolving upon the female folk, it was not always the gentler sex who handed around the drinks. Thus among the Uaupes River Indians Wallace relates that when the *caxiri* [cassiri] was being abundantly supplied three men were constantly employed in carrying it to the guests. They

came one behind the other, down the middle of the house, with a large calabashful in each hand, half stooping down, with a kind of running dance, and making a curious whirring, humming noise. On reaching the door they parted on each side, distributing their calabashes to whoever wished to drink . . . every time with the same peculiar forms, which evidently constitute the etiquette of the caxiri servers (ARW, 205). With the island Carib, for strangers of their own nation there was a special attendant, a male, appointed to wait upon and serve them, etc. (sec. 811). A male also served during the chieftainship ordeal (sec. 745).

903. With the exception of jangling seed capsules, all musical instruments would seem to be the perquisites of the sterner sex. For information concerning the status, etc., of women in the community see dancing (sec. 595), female chiefs (sec. 750), warfare (secs. 755, 761).

CHAPTER XXXV

BIRTH AND CHILDREN

Accouchement (904); umbilical cord (905); post-partem ablutions (906);
couvade (907).

Abortion (908).

Suckling to an advanced age (909).

Lullaby songs (910).

Affection for children (911).

Education by habitude and experience: knives (912); baby hanging-chair, etc.
(913); chastisement (914).

Regard for children's property (915).

904. Among the present-day Arawak and Warrau of the Pomeroun a woman is delivered either in a separate banab (utilized also at the menstrual period by other women) or in a portion of the house screened off with manicol, truli, or other thatch. She is accompanied by her mother, or some old woman relative of either parent. Makusi and other women may go alone and without assistance into the neighboring forest, provision field, or an unoccupied hut (SR, II, 313). In former times, referring to the Surinam Carib, as soon as the time of her confinement grew near, the woman retired into the forest, and there in the midst of untrammelled nature the little redskin made his entrance into the vale of tears. The cause of this strange custom is possibly to be sought in the fear of ridicule and maltreatment, which undoubtedly the woman receives if she brings into the world a twin or abnormal child (sec. 729). By hiding in the forest she thus had an opportunity of killing the child or shuffling it away before her man or remaining women in the village noticed anything. . . . As soon as she had taken a little rest she returned with her baby to the house, where she immediately continued on with her work (PEN, I, 158). On the Uaupes River a woman may be delivered even in the maloka (KG, II, 146). Many instances are noted where an accouchement has apparently made no difference whatever in the daily routine; e. g., when on the march an Indian [Guajiva or Chiricoa] is taken with labor, she just steps aside, is delivered, wraps up the baby with the afterbirth and runs in haste after the others. At the first stream that presents itself she washes herself and infant (G, I, 255). "So again, the mother [Wapishana] with her first born in her arms, had been in our hut," says Schomburgk,

“only a few minutes before. Within half an hour she appeared with another baby that she had just given birth to in the bush without any assistance. She went into her own hut, which was close to the stranger’s house. Here she sat on the ground with baby in her lap, while her husband built a partition wall with palm leaves (SR, II, 389). On the other hand, if delivered in a hut she may, under certain circumstances, remain in it for a number of days subsequently.

The position assumed in parturition by Arawak women is apparently to press the coccyx upon the top edge of a section of banana tree trunk wedged against two pegs driven into the ground at the same time that she presses with her feet against the wall of the hut, and pulls with her hands on a rope, etc. The Wapishana will sit astride a longitudinally slit hammock, with her toes just touching the ground and her hands dragging at a rope attached to a beam above.

In Surinam, it has been said, that should the slightest difficulty be experienced in labor, the women have recourse to the sap of a tree, which insures them an easy and prompt delivery (FE, 81).

905. As to the navel string, it is either bitten, cut, burned, or tied. The umbilical cord is bitten with the teeth and tied with a strand of the *Bromelia karatas*, but this tying process the Warrau don’t seem quite to understand as yet (SR, I, 166). The Kobéua of the Uaupes River use the *Scleria*, a species of razor grass, for cutting it (KG, II, 146). Among the Makusi it is severed by the mother or sister with a sharpened piece of bamboo cane (for a boy) or arrow reed (for a girl), and then tied with cotton thread (SR, II, 313). So also, but apparently without distinction of sex, it is severed with a sort of “paper knife” made of bamboo by the Roucouyenne of Cayenne, the Piapoco of the Guaviar (Cr, 526). Arawak at the present day use a piece of sharpened arrow reed, but the women tell me that in the olden days a fire stick was employed. This is confirmed by a passage in Bancroft, that they divide the umbilic vessels with a brand of fire, which cauterizes their orifices and renders a ligature unnecessary (BA, 330). Arawak tell me that the mother keeps the cord until her child, as man or woman, dies, when it is buried with the body. The afterbirth is buried by the mother immediately after it is expelled. It is also said of these people that when the child is born the mother does not touch it, but the old midwife has to do this first and pick it up.

906. Delivery would seem to be followed, sooner or later, by the ablution of both mother and child. Thus St. Clair speaks of the Corentyn Arawak. These women are very prolific and seldom miscarry. No sooner are they delivered than, proceeding to the next river they bathe, and hanging their child around their necks in a

kind of scarf made of cotton, they return to their occupations without the smallest inconvenience (StC, I, 327). On the other hand, Bancroft's account would tend to leave the impression upon the reader that (in Demerara) the woman's share in the treatment was a passive one. The mother and newborn infant, when delivered, are carried and plunged into the water, and the next day the former resumes the discharge of her domestic employments (BA, 330). With the present-day Arawak the baby is not washed until the navel is healed. Among the Uaupes River Indians the mother takes the child to the river and washes herself and it, and she generally remains in the house, not doing any work for four or five days (ARW, 345). In Cayenne the Roucouyenne mother, after confinement, takes a vapor bath. She lies in a hammock, and underneath is placed a big stone, which has been freshly heated upon the fire, and water poured on it (fig. 735). . . . Besides mother's milk the baby is fed from time to time on a drink made from the juice of cooked ripe bananas squeezed by hand into hot water (Cr, 242).

907. Though no mention appears to be made by Gumilla of couvade on the Orinoco, Crévaux relates the following from the Piapoco of the lower Guaviar, one of its upper left-hand tributaries: Accouchement takes place in a hut, where the woman remains seven days subsequently. During the same period the husband remains in his hammock. Both partake only of a little cassava and water (Cr, 526). Traces of couvade on the upper branches of the Rio Negro appear among the Siusi, an Arawak stock, where for the five days that the mother keeps childbed neither parent may work nor wash and only eat cassava cake and peppers (KG, I, 183). In a higher degree of development the custom prevails on the same watershed among the Tukuya (KG, I, 312) and apparently the Kobéua (KG, II, 146), both of Betoya stock. But eastward the practice is recorded throughout the Guianas, e. g., Demerara (HiC, 229), Surinam (St, I, 398; FE, 81), Cayenne (GB, 47; PBA, 223, 224), and even in the islands (PBR, 248, 249). Particulars of the local variations in couvade are to be found elsewhere (WER, VI, secs. 281-283). As Penard's account and explanation of the facts as observed among the Surinam Carib, of whom no one can speak with better authority and experience, are certainly the most satisfactory of any that have been hitherto offered, I am giving them in greater detail: On the return of the mother and baby from the forest, where she has just been confined, back to the house to resume her household duties, the father takes to his hammock to be pampered. This takes place on the supposition that the infant's body proceeds from the mother, but the spirit, on the contrary, from the father, and that a mysterious connection binds the child's spirit to the father's for some weeks after

birth. With newly born children the middle of the skull is very soft and pulsates with the respiration of the heart. In prematurely born children the attachments are even open, which perhaps has given cause for the supposition that the child before birth is nourished not through the navel-string but through the skull, and that its spirit penetrates through a little hole in the skull into its brains. As long as this spot is thus not hardened, it is believed that the little spirit is not yet entirely freed from that of the father. Thus it was supposed the life of the child depended entirely upon that of the father. He was also forbidden to undertake any heavy work or to hunt, because his arrow might strike the little infant. If he climbed over a tree trunk he always placed two little sticks as a sort of bridge for the child's little spirit that always followed him. If he crossed a river or creek, a calabash or fruit shell then served to facilitate the passage across of the child. He everywhere trod cautiously and carefully around, avoiding thorny places. And if he by chance met a jaguar he did not speed away, but courageously advanced on the beast. Verily his child's life depended on it. The little spirit nevertheless could get a fright and lose its way in the forest. Even at night the father had to take care to save his child pain. However badly something bit him, he must scratch very carefully, because his nails could harm the infant. And woe to him if he forgot himself and attempted, in too rough a fashion, to get rid of a louse that was worrying him, because the bare pate of his little darling suffered for it. There were likewise various foods that the father was forbidden to eat out of fear of hurting the child. Among other things, it was believed that water-haas meat caused spots. This abstention took place before as well as after the birth of the child. If the child, in spite of all the father's care, took sick, the latter then visited the piainan who, by calling upon the spirits in the usual fashion, speedily recognized the cause (generally a stranger) of the trouble. If the cause was not due to the snake spirit, the kanaima, the father was advised to make certain incisions on his breast and arms. Mixed with water, the infant was then given the blood to drink; or the evil spirit was, with the help of certain ants, bidden out of the child's body, or charmed away with tulala. . . . We believe that the custom of the couvade affords the proof or means whereby the man is placed in the position of determining whether it is his child or another's. For it is believed that if the father does not abide by the rules, the death of his infant results. If the latter lives, then everything is in order; if not, it must be an imputation that it is the offspring of its mother's prostitution. Verily, the guilty man will keep no couvade for fear of the righteous wrath of the deceived husband (PEN, I, 159, 160).

908. There is the authority of Gumilla that the practice of making themselves barren by taking herbs and drinks existed among the women of the Orinoco tribes (G, II, 294, 318), a statement which would seem to have been subsequently confirmed by Von Humboldt, who mentions this custom of preventing pregnancy by the use of deleterious herbs as among the causes tending to depopulate the Christian settlements on the river in question (AVH, II, 248). Schomburgk makes similar remarks of the Makusi women when he says that we must almost accept as true that the females in many cases seek, by artificial means, to prevent pregnancy (SR, II, 312). My own opinion, however, is that these statements are based rather on hearsay than on fact.

909. The practice of keeping infants at the breast to a comparatively advanced age is universal. The Warrau mother will suckle her offspring up to 3 and 4 years of age. Sometimes she will have one at each breast (SR, I, 166). Both among the Arekuna and Makusi the child is also given the breast up to the third or fourth year, and if a new baby appears the previous one will be handed over to the grandmother, who carries out the mother's duties with it. This has been observed among the oldest of Indian women. It is also the old lady's business to bring up the young mammals found by the father or son. When Schomburgk expressed surprise at these occurrences, he was informed that the women practice a means whereby the milk is retained to extreme old age (SR, II, 239, 315). In his account of the Surinam Indians Fermin says that the mothers never swathe their children nor lull them to sleep. Indeed, the very opposite, he declares, takes place, for while they are occupied with the household duties they place them quite naked on the ground, where the little creatures drag and roll themselves at their will in the sand (FE, 81).

910. This, however, would not appear to be always the case, because not only do the Carib and Akawai, like the Kobéua (Betoya stock) and Siusi (Arawak stock), employ special hanging chairs (sec. 913) for them, but Carib and Arawak parents certainly do sing their infants to sleep. Lullaby songs are sung both by the (Arawak) father and mother. Among the former are:

Badongka máma obóra
tiltandoni bibida mai-ani
tánokebe fati
máma tánokebe fati

and

Mai-ani abo
bosali bífedo bishibo
au-su bo-yu ibichiro

Sleep! mammy comes.
until she comes, stop, don't cry.
(she) comes just now.
mammy comes just now.

Don't cry now.
go wipe face.
and go mother to her.

Among the latter is the very common one:

Badongka illorlo papa obora
wa-ubadate obora

Sleep, child, father is coming.
Let us wait (he is) coming.

I obtained the following three lullabies also from the upper Pomeroon Carib:

The acouri is crying; it wants potato and milk.

Shoot the marudi. Uncle! there it is feeding upon the tree, behind the thick bushes: take an arrow with you.

Daddy! there are tracks of the powis in the house.

911. Opinions would appear to differ as to the mutual regard and affection existing between parents and their children, but whether this is dependent upon the characteristics of the particular tribe or upon the local circumstances under which the particular traveler drew his observations, it is difficult to say. At any rate, I would submit a few extracts from certain authors, who certainly had an intimate knowledge of the Indians, and all of whom may be credited with only publishing such information as they themselves deemed reliable. "When children are small," says Gumilla of the Orinoco tribe, "their parents treat them with exorbitant and foolish love . . . But all this extravagant sentimentality which they expend upon them when young and small changes to hardness of heart and displeasure when they begin to be youths and adults. They now regard them as if they had never known them; and never order them to do anything if they are unwilling to do it with a good grace. They do not joke with them in sprightly conversation. They restrain them in nothing, and, what is worse, they do not command respect" (G, I, 135). But among the Arawak there is Brett's statement that the parents are also fond of their children, and so indulgent that they very rarely chastise them. Little reverence is consequently paid by the child to its parents. The boys in particular are so little controlled by the mother as to be remarkable for their disregard for her . . . This is during childhood. But when they grow up and become themselves the heads of families, there is no want either of respect or attachment toward their aged parents (Br, 99). And, again, Schomburgk writes: "The Indians have been accused of want of affection toward their children, but I have seen frequent instances to the contrary" (ScG, 246). On the other hand, the opinion of another author, speaking of the present-day Surinam Carib, is that the young people appreciate the experiences of their parents or grandparents, but that of real respect there is very little. An Indian regards his father and mother, when they get too old to work, rather as nuisances than as anything else. In former times the state of affairs was still worse, the old folk being just buried alive (sec. 917). It is difficult to determine, however,

whether this arose from parental love, although it would seem that it was done with the consent of the victims themselves, who, realizing their impotence and uselessness, frequently offered themselves for the purpose. Yet all redskins are not as heartless. We once even heard a sober youth exclaim: "I want to get back to my mother, to the spot where I played as a child. I will bathe in the stream and see the flood rise at the spot where I was born. My sister will not recognize me more, and she will be ashamed of me for a couple of days, and see in me an ordinary every-day man" (PEN, I, 165, 166).

912. The children . . . pass the state of infancy without receiving much attention or assistance from the parents, except food only; but this neglect is far from proving detrimental, and they much sooner acquire strength and self-sufficiency . . . The males, as they grow toward manhood, attend the father in hunting, and by habitude and experience acquire sagacity and expertness (BA, 331). The Carib youngster has to learn by himself, since his father considers it unnecessary to instruct him in such simple things as the secrets of the forest, the making of plaitwork, bow, and arrows. "See what we do and follow us," say the parents to their children. Explanations are considered superfluous. Only once did we hear a man say to his little boy, "Open your eyes and ears, so that later on you will not be able to say that I gave you no chance to learn." The chance referred to was the animal tulala (charm, talisman). There is but one thing that is impressed upon the child from its earliest youth with fairy tales, legends, etc., and that is, an eye for an eye, a tooth for a tooth, and likewise never to look surprised (PEN, I, 164). It is true that expertness in the use of weapons might be specially encouraged, as was the case with the Otomac women, who did not allow their boys to partake of food or fruit unless they succeeded in hitting it with their arrows when put up as a target (G, II, 89). The girls at the same time are devoted to the service and assistance of their mother. They are soon brought under discipline and taught to take care of the smaller ones, and to learn the economy of an Indian household. They are seldom away from their mother's side, except when she goes for a while to the field, at which time the little housekeepers are left to look after the house and the little ones (Da, 250). Just like their modern counterpart elsewhere, the Orinoco children did not shrink from heroic measures to insure excuse for playing truant. Gumilla mentions how the youngsters would allow themselves to be stuck with a sting-ray tail out of pure devilry (*malicio*), so as to free themselves from going to school and to doctrine (*doctrinia*) which they avoid whenever they can, such tasks being opposed to the tastes of that age (G, II, 206). One might say that children are born to the use of knives. It is of common occurrence to see a boy of 3 or

4 years of age running about with a bit of cassava bread in one hand and a knife in the other; running back to suckle for a moment and then off again to play (Da, 250).

913. Once the child is too big for the baby sling, and the mother has work to do that prevents her carrying it on the hips, she may make use of a hanging chair (fig. 340). With the Moruca River Carib this chair is made of a wooden hoop, supported by two strings



FIG. 340.—Baby's hanging chair.

and a stick from which it is hung. Across the hoop is tied a 4 or 5 inch wide cotton band, whereon the infant sits astride. The hoop may be decorated with cotton tassels. The Siusi (Arawak stock) and Kobéua (Betoya stock) of the Uaupes River district employ a similar article (KG, II, 148). It serves the double purpose of giving the mother a rest and keeping the infant out of mischief. It is quite safe now, can not crawl on the ground, eat earth, and get into a mess, while at the same time it can be taught to walk. Penard is responsible for the statement that as it is of importance to the mother that her suckling should quickly learn to creep and walk, she sometimes has recourse to very drastic measures, e. g., putting her infant on a spot where there are ants. The child, out of pain, tries to stand up, and by so doing soon learns to walk (PEN, I, 162, 163).

914. The Indians very seldom can overcome their feelings so as to correct their children, nor do they like to see it done by anyone else (BE 147). The boys have their wills uncontrolled, and are never, or seldom, chastised (Da, 250). Children grow up without discipline, which, however, does not prevent them having a sort of respect for their parents and elders. Among the Arawak, they address their parents in the plural, just as inferiors do their superiors. The Carib, on the other hand, make absolutely no difference (PEN, I, 162, 163). Parents are exceedingly affectionate to their children, so much so that an Indian will bear any insult or inconvenience from his child tamely rather than administer personal correction (HiC, 229). But occasionally there may be another, though extremely exceptional, face to the picture like that limned by

Brett of an experience among the Warrau on the Manawarin, a branch of the Moruca River: After we had retired to rest, a child happening to cry, one of the women arose from her hammock, and taking a large piece of firewood, struck it violently several times as it lay, and then suddenly caught it up, ran to the bush and hurled it from her (Br, 168)

915. Regard for the children's property by the parents has been noted by two such careful observers as Pinckard and Hilhouse. "At Savonette, on the Berbice, I persevered, therefore," says the former, "in my seeming attempts to prevail on the woman to let me have the bow and arrow, but she was true to nature; and her child's happiness was the first object of her parent breast. No offer, no inducement, could tempt her to barter her son's peace . . . I displayed to the woman my handkerchief and my pocketbook, offered her money, tried to soothe her son, and feigned every means of persuasion, but all in vain" (Pnk, I, 501). On the arrival of a stranger at an Arawak house . . . besides food, etc., every article of arms or furniture, except the toys of the children, is at his disposal (HiC, 230). [A similar trait has been reported from the Gran Chaco, where an Indian will never give away anything belonging to his wife or children without asking them first (NOR, 35).]

CHAPTER XXXVI

SICKNESS AND HYGIENE

Special intonation of speech used in cases of sickness (916).

General neglect of the aged and feeble (917).

Fear of disease (918).

Ordinary routine treatment of disease: Restrictions of diet (919); emetics and purgatives (920); enemata (921); ablutions and vapor baths (922); bleeding (923); blood as a therapeutic agent (924); suction (925); counter-irritants (926).

Treatment by drugs, etc., of the more common ailments: Eye complaints, fevers, dysentery (927); fits (928); snake bite, sting-ray wounds, etc. (929); poison antidotes (930).

Personal hygiene: Early rising (931); bathing (932); mosquitoes (933); lice and chigoes, etc. (934); sanitary measures (935).

916. Hilhouse has stated that, with the Arawak, a particular plaintive intonation is used in inquiries after the health or welfare of those who are ill or unfortunate; and the tone of expression is always suited to the circumstance and situation of the party addressed (HiC, 248). Schomburgk gives a graphic illustration of such variations in his description of the trial of an Arawak-Warrau divorce case (SR, I, 229).

917. There is one great failing which unfortunately appears to prevail among all the tribes—neglect of old persons and the sick. They are stowed away in a small corner of the house, neglected, and left to themselves; and where weakness keeps them to their hammocks, perhaps often without the necessities of life (ScG, 246; KM, 68). When old and past work they are, indeed, allowed to remain in their hammocks in the house, which once, perhaps, belonged to them, and are fed by their younger relations in a rough and grudging manner; but no further care or kindness is shown them (IT, 224). Now and again, however, an exception is noted; e. g., Gumilla makes mention of a decrepit old woman whom the Guajiva had carried about with them for many years in a basket (G, II, 19), and Crévaux that of another and her aged half-imbecile daughter, who were being well looked after by the other Warrau (Cr, 611). De la Borde relates how some Frenchmen wanted him to believe that they [Island Carib] killed their fathers when they were too old, as being useless in this

world, and that it was rendering them a great service thus to deliver them from its troubles; but the Carib assured him that this was not true (PBR, 253). Yet in contradiction to this statement there is the evidence of Rochefort as follows: True it is that some Carib heretofore have hastened the death of their parents and have killed their fathers and mothers out of a persuasion that they did a good work and rendered them a charitable office by delivering them out of many inconveniences and troubles which attend old age (RO, 565). On the other hand, whatever the omission of altruistic duty to which the Guiana Indian male might plead guilty, so long as he himself had wife or mother, he would be neither forgotten nor neglected.

918. Many are the references throughout the literature of cases where the Indians have taken to their heels upon the development in their midst of diseases new to them, i. e., introduced directly or indirectly by Europeans and Negroes (Cr, 505). In the course of a smallpox epidemic on the Corentyn the Indians deserted their dwellings and took to the woods, leaving the unfortunate sufferers to the care of a few old women (StC, I, 299). Brett relates that when the cholera broke out on the Pomeroon some of the Carib went into the most inaccessible parts of the forest to escape the disease, and learned that they had even cut down large trees to obstruct the paths, lest the people should too easily follow them (Br, 225). The felling of the trees, however, was rather to prevent the evil spirit that caused the disease from pursuing the fugitives (PEN, I, 176). Crévaux was informed at San Fernando that the Piaroa Indians (Orinoco River) avoid contact with the whites. They have so great a fear of *calentura* [fever] and *catarro* [influenza] that they won't touch with their hands a piece of money offered them by the whites before washing it with a stick (Cr, 542). The same traveler subsequently had a personal experience of similar nature among the same Indians, by whom he was well received, but happening to sneeze he saw the circle around him broken. The most timid betook themselves to a distance, the bravest closing their noses with the thumb and forefinger (Cr, 543). The Trio (Surinam) asked De Goeje's party several times whether they had brought disease with them, and emphatically warned them on taking their departure not to bring any under any circumstances (GO, 15). The Parikuta host in welcoming his guest expresses the hope that the latter has brought no bad spirits with him (sec. 813). These examples must not be taken as indicative of the Indians having any appreciation of the contagiousness of disease, as one or two travelers would seem to believe, but rather as indicative of their conception that disease can be sent them, etc., by their enemies or the medicine men (WER, VI, sec. 307).

919. Independently of the treatment of disease as practiced specially by the medicine men, e. g., the incantation of certain spirits, and their exorcism, the blowing of tobacco smoke, and the extraction by suction of the offending cause of the complaint, as already described (WER, VI, secs. 305-316), there is a sort of routine treatment followed by the lay and medical fraternity in general. This usually consists of restrictions in diet, emetics and purgatives, abutions and vapor baths, bleeding, counterirritants, and drugs, but as to how far and in what order one or all of these precedures are carried out will depend upon circumstances—generally upon how long the poor patient's condition is able to survive them. The restrictions of diet may vary from the limitation of several foods to a cooked drink of cassava meal, often an absolute fast. But the curious part of the affair is that similar taboos may be, and are, simultaneously imposed upon the sick person's kinsfolk. The majority of the medicine men on the Orinoco demand that no one belonging to the household should eat anything hot, anything cooked, or peppers (G, I, 208). Similar restrictions are observed in cases of snake bite (sec. 929).

920. Let the disorder be what it may, an emetic is first administered, followed by a purgative. Both of these are of such proportions that many die from sheer exhaustion (BE, 60, 231). The bark of the wallaba tree [*Eperua* spp.], which is somewhat bitter, is a very good emetic, and the only one which the Indians ever use in this part of Guiana [Demerary]. They usually boil two or three drams in a quart of water, of which they drink a few spoonfuls, which immediately excites the stomach (BA, 85). Stedman reports the employment of tobacco juice for similar purposes (St, I, 399). A small creeper, a species of *Vandellia*, is used as an emetic with great success (ScD, 97). The root of the *Cephaelis ipecacuanha* Rich. supplies the strongest ipecacuanha. Of the purges among the medicinal plants mentioned by Schomburgk as known to the Indians, as well as to the mulattoes and Negroes, are *Adenoropium gossypifolium* Pohl., *Boerhavia hirsuta* Linn., *Lisanthus alatus* Aubl., *Allamanda Aubletii* Pohl. (SR, II, 335).

921. The first mention of enemata is made by Barrère from French Guiana, though he believes this practice to have been learned from the Portuguese and English. There are nations toward the Amazon who use an injection with syringes (fig. 4) or a kind of ball made from the milky juice of a tree (sec. 23), which they boil and then pour into molds made of clay kneaded with sand (PBA, 139-140, 205). Dance mentions these articles as apparently known to the British Guiana Indians (Da, 334-339), while even at the present time they are of very common use on the Pomeroon and

Moruca Rivers, where they are made from the bladder of the turtle, jaguar, sloth, and larger mammals attached to a reed nozzle (fig. 341). The Arawak speak of them as akkesoa-hu. There are thus

apparently equally as good reasons to consider them of indigenous origin.

922. The Indian [on the Essequibo], when attacked by fever, sets himself up to the neck in water, not inquiring into the cause which occasions it (BE, 230), until the paroxysm of fever is over or sudden death prevents his coming out again (BE, 60). If the sick person is unable to walk the husband or wife will think it a kindness if either should pour a calabashful of water over the body of the sufferer (BE, 230). To administer a bath to the old man (in a case described by Dance) they first embrocated his whole body with a mixture of turtle's blood and cassava. Then the gory application was washed off and they poured upon him in succession, alternately, a calabash of warm water and one of cold water, continuing the process about half a dozen times. Then his feet were washed with warm water . . . and helped into his hammock near a good fire (Da, 246). [On the Orinoco] the Otomac poured cold water continuously over the sick, and with it they died more quickly. The Guayba and Chiricoa were immersed in coolish mud or in water, with only the head exposed, in order that the fever might leave them, and although they usually found them dead when they came



FIG. 341.—Jaguar-bladder enema. Pomereroon River.

to take them out, they were not tutored by experience (G, I, 208). On the authority of W. C. McClintock, medicated baths [decoctions of various barks] would seem to have been in general use among the various tribes (CC, 24). A steam or vapor bath is often re-

sorted to in the case of fevers. Large vessels with water, into which glowing hot stones are thrown, are placed under the patient's hammock, as described by Schomburgk among the Makusi (SR, I, 428) and Guinau (ScF, 226). In the reverse process, likewise recorded by him and by Pinckard, water is thrown upon large heated stones, and the sick person is enveloped in the steam (Pnk, I, 505; SR, II, 333, 334). The Roucouyenne women employ vapor baths after confinement (pl. 149 B).

923. Bleeding was practiced both as a preventive and as a cure, some interesting examples of the former being met with in Gumilla's account of the Orinoco Indians. Thus those [Guamo] who were drunk fell asleep covered with blood from head to foot, because when they felt the strong beer beginning to get the better of them they believed it due to some other cause, and in order to avoid the evil effects which they feared might ensue they slashed their temples and parts of the forehead with sharp fish teeth and pointed pieces of bone (G, I, 163). Again, [during the course of the Otomac ball game] when the sun began to rise high in the heavens and got very hot, then the bloodletting also began. They had with them their sharpened awls, with which they scarified their thighs, legs, and arms in a way so savage and cruel as to make one shudder. Without ever taking their eyes for a moment from off the ball as it flew to and fro, they scarified themselves blindly, without caring whether the incisions were deep or slight. The blood streamed to earth without their taking any more notice of it than if it were some one else's, and when they considered that enough had flowed they plunged into the river to staunch it. But if it still flowed they filled up the wound with sand (G, I, 171). On the Apaporis there has been noted a scarifier of fishes' teeth fixed in a fragment of calabash for use in all conceivable diseases and for the strengthening of the muscles (KG, II, 289). Bleeding may also be resorted to as a cure for weariness by the Makusi and Wapishana (ScO, 445). Brown gives the following experience, from the Cotinga River, near a small stream in the bed of which were large areas of flat sandstone rocks with hollows in them. Some of these hollows were filled with clotted blood, which, upon inquiry, he learned had been drawn from the arms and legs of the Indians. When Indians suffer from any pain or stiffness in the limbs, caused by fatigue or otherwise, they procure a sharp, flinty stone or piece of broken glass with which they score the affected part in long parallel cuts, just piercing the skin and allowing the blood to ooze out in little beadlike drops. By scraping down the cuts with a knife edge the beads of blood are removed and more blood oozes out; but on letting the beads remain, they coagulate and prevent any further

flow. In this way they can draw just as much blood as they like from the part (BB, 127). The majority of the Taruma have on arms and legs some longitudinal scars which . . . are specially cut when tired on the march. The loss of blood eases and rests them (Cou, II, 350). [In the Gran Chaco the Indians similarly practice bleeding when tired (NOR, 54). The Indians of Essequibo have recourse to bleeding in cases of local inflammation, inflicting large incisions with the knife (BE, 231). Bernau found an Akawai bleeding profusely from the nose, a lesion which he had produced by means of a sharp grass with which he had cut the membranes (BE, 232). [Strange to say, this is a procedure identical with what I have seen practiced by the North Queensland savage.] Still more drastic are the measures adopted by the Makusi. Pinching and raising up the vein immediately above the wrist with his left hand, he stabbed it through twice or thrice with a sting-ray spine. Upon its withdrawal the recurved hooks on the edge of the implement naturally increased the size of the wound, and after letting it bleed for some considerable time he tied it up with bark (SR, II, 164). Speaking generally, after scarification, the bleeding may be checked by rubbing into the wound the astringent and sharp juice of some *passiflora*. Other wounds are washed clean, held over the fire, and then bound up (SR, II, 333).

924. Blood is also employed as a therapeutic agent for anointing another person, but in these circumstances there would appear to be some intimate relationship existing between the giver and the receiver, as will be observed in the following cases, the only ones I can find, which I am about to quote. When Guamo women saw any of their children—sucklings or older ones—sick they would transfix their own tongues with a bone lancet and bespatter the youngsters with mouthfuls of blood, which they would then rub over them from head to foot (G, I, 164). [Blood is obtained from the tongue in a similar manner at the burial ceremony of the Guahibo and Chiricoa (sec. 853).] Elsewhere in some cases, the father, when the child is weakly, gets his own flesh cut in close parallel lines. The blood flowing from the wounds is mixed with water for washing and strengthening the child (Da, 250). The Surinam Carib father smears his sick infant with his own blood during the *couvade* (sec. 907). Among the Guamo it was one of the duties of the captain to slash his flesh and with the blood so obtained to besmear the breasts of all those under his command who were sick (G, I, 164). As to other therapeutic properties, I append the following extract: "The only remedy is the voluntary submission of Aaron to have blood taken from his body and with it to wash the girl he has poisoned" (Da, 285).

925. "It is not necessary to be a *payé* (medicine man) to suck out pains. Among the Barré it is commonly practiced, and I have seen," says Spruce, "a fellow hang onto his comrade's shoulder for half an

hour together 'sucking out the rheumatism' . . . Formerly they had professional chupadores or suckers, but in my time (1852, etc.) there were none such besides the payés" (RS, II, 435). The Makusi pour in kokerit-seed oil in cases of earache.

926. Certain biting ants are used for counterirritants. For the cure of fever the patient [Carib] picks up a yoku ant and causes it to bite him on the temple. For a headache the ant is placed so as to bite the crown of the head, and it is applied to any part of the body to relieve by its bite the particular part affected (Da, 348). Among the Warrau of the Waini, when rheumatism resists all other means of treatment, a certain large ant, *Ponera clavata* (*Formia clavata* Br.), is held between two little bits of stick and made to bite the painful spot a few times (SR, I, 130). Muniri ants, fastened into the slit made in a short stick, may similarly be applied to places where pain is felt (BE, 232, 260). A still more effective manner would seem to be that which I have known more than once to happen, where the patient afflicted with fever has deliberately lain down and rolled himself in an ant's nest.

927. An excellent chapter has been written by Dance on "Contribution to a Guiana Indian Pharmacopœia" (Da, 334-339). In the Catalogue of Contributions transmitted from British Guiana to the London International Exhibition of 1862 mention is made of some 140 medicinal barks, collected by W. C. McClintock, as in use by several tribes of Indians. The form in which these barks are used as remedial agents is chiefly that of a decoction, in many cases the inner bark in its recent state being selected as most efficacious (CC, 19-24). Schomburgk, Brown, and others have also supplied us with much valuable information in this connection gathered during the course of their travels in the interior.

The following notes bear on the native treatment by drugs of the more common diseases and accidents:

Eye complaints.—The Indians when their eyes are inflamed often tie the leaves of the moku-moku (*Caladium arborescens*) over the eyelids, and a plentiful secretion of the lachrymal glands usually ensues which generally resolves the inflammation (BA, 104). A decoction of the roots of the wansimai is used on the Pomeroon. The purple red juice of the kuruwatti (*Renealmia exaltata*) is employed for diseases of the eyes (DF, 74). One woman there [on the upper Quitaro] applied one of the most extraordinary remedies for ophthalmia to her child of 5 years of age that I ever heard of, says B. Brown: She actually rubbed the juice of a large red pepper into both its eyes, which made the poor little creature scream and cry most bitterly (BB, 171).

Fevers.—Schomburgk gives the following, made from decoctions of their respective barks: *Diospyros paralea* Steud., *Scoparia dulcis*

Linn., *Lisanthus purpurascens* Aubl., *Myrmecia scandens* Willd., *Strychnos pseudo-quina* St. Hil., *Quassia amara*, *Uvaria febrifuga* Humb-Bonp., *Nectandra Rodiei* Schomb. Others, he mentions, are used as infusions: *Eryngium foetidum* Linn., *Byrsonima crassifolia* (SR, II, 334). It would seem that we have to thank the Europeans and not the indigenous inhabitants of America for our knowledge of cinchona bark (SR, II, 230). The Indians of the Rupununi set a great value as a febrifuge on the bark of a tree which they call allisau, believed to belong to the Bucku tribe, Diosmæ (ScD, 97). A cayman penis is employed for fever by Brazilians (SR, II, 355).

Fever and dysentery.—The Amapaima (*Cryptocarya pretiosa* Mart.), the *Casca preciosa* of the Brazilians, has an aromatic bark and is used by the Makusi in illness of this nature (ScD, 36; ScO, 113; SR, I, 443). The Mauhé of the lower Amazon are the only tribe who manufacture guaraná, a hard substance made from the pounded seeds of the *Paullinia sorbilis*, which they sell in large quantities to traders, it being used throughout the whole of the interior provinces of Brazil, grated and mixed in water as a remedy in diarrhoea and intermittent fevers (HWB, 245). This is apparently identical with the coupana, a seed which the Piapoco of the Guaviar River employ to give themselves strength. They rasp a quarter of an unripe seed in cold water, and drink this beverage, which is bitter and aromatic (Cr, 508).

Diarrhoea and dysentery.—For the cure of these complaints, Schomburgk reports the administration of bark-infusions of the following: *Byrsonima crassifolia*, *Willoughbeia acida* Willd., *Stachytarpheta jamaicensis*, *Acrodictidium camara* Schomb. or Akawai-nutmeg (SR, II, 334). This same traveler makes some interesting observations on the viccis, a dysentery with a strong inclination to sleep (SR, I, 428). A decoction of green-heart (*Nectandra*) seed is a very common remedy for diarrhoea among Pomeroon and Moruca Indians as well as elsewhere. The sap of the wild nutmeg (*Myristica*) is used as a mouth wash and as a cure for "yaws."

928. *Fits.*—Tapir hoofs are first singed and then placed in water, which is drunk as a remedy, both on the Essequibo (BB, 240) and Pomeroon. Among the Orinoco Indians, besides being crushed to powder, one might be hung on the neck of the patient (G, I, 265). On an occasion of Brown's servant being attacked with an epileptic fit, the men put salt in his mouth, and rubbed it also into the palms of his hands, while an old Indian woman was very attentive, burning some dried leaves of a peculiar kind under his head that he might inhale the smoke and obtain relief (BB, 256). Amazon or green stones (WER, VI, sec. 241) were believed to cure the stone, stone colic, and epilepsy (LCo, 71).

929. *Snake bite, etc.*—In addition¹ to the ordinary methods of treatment for snake bite, such as cutting out and sucking of the wound, and eating the fresh sap of the sugar cane (also considered a certain cure for poisoned arrows), there is something peculiar to each tribe. Thus, in certain of them, neither the bitten person, nor his children, nor his parents, together with his brothers and sisters, so long as they live in the same settlement, are allowed to drink water, bathe, or come into the neighborhood of water, during the period immediately following the accident. His wife alone is allowed to do this. A thin pumpkin stew, only to be taken warm, has to quench his thirst, roasted plantain being the only food allowed him just now. If the person has taken sugar-cane juice upon being bitten he must later on avoid all sweet things. Other tribes believe in woman's milk as an efficacious antidote in conjunction with emollient cassava-bread poultices. Others apply the expressed juice of the *Dracontium dubium* Kunth. Apparently widely spread for the bites of rattlesnakes is an infusion of *Byrsonima crassifolia*, *Mourelia*, and *Quebitia guianensis* Aubl. (SR, II, 130). For the treatment of snake bite on the Essequibo, Bernau is responsible for the following: If an Indian is bitten on his finger, which, however, occurs very rarely, he chops it off with one stroke of his knife. But when bitten in the heel, which happens oftener, or in any other part of the body, he kills the snake, chops off the head, and cuts it up until it is something like a paste, which he then binds upon the wound, and leaves it there till it becomes perfectly dry. He goes in search of a plant called in their language [Arawak] boru-boru, and having dug out a sufficient quantity of roots, makes a decoction of them which he drinks and pours upon the wound. I have known several cases of recovery by means of this root, but the individuals bitten, though healed, have betrayed at times a painful state of aberration of mind, and were affected with a trembling of all their limbs (BE, 173).

For sting-ray wounds the Indians of the lower Amazon use a poultice of mangrove bark mixed with palm oil (S-M, III, 955). I have seen the Wapishana scrape a length of moku-moku, heat it over a fire, and squeeze the juice into the wound, a course of treatment which certainly appeared to alleviate the pain.

The very sticky gum of the wallaba (*Eperua* sp.) and that of the *Protium aracouchili*, used as a plaster, are said to constitute an excellent treatment for wounds in general. Otherwise, such injuries are carefully washed and then held for some time over a fire (SR, II, 334).

Indians will allow abscesses to develop and apply heat with fire until they burst.

930. *Poison antidotes.*—In the case of curare (sec. 121) Schomburgk was told by the Indians that sugar and salt were antidotes for the poison, but could not guarantee the statement (SR, I, 445–447). “Curare will not hurt anyone who keeps salt in his mouth,” says Gumilla, but he naïvely adds, “Who can suffer to keep salt for any length of time in that situation?” (G, II, 130). A decoction of the leaves of *Potalia amara* Aubl. is employed as an antidote for cassava poisoning.

931. Like all the Indian tribes, they (Maionkong) awake early and chatter to each other while lying in their hammocks. At 5 o'clock they rise to bathe in the neighboring brook or river, while their morning meal is preparing by the women, after which they go out to hunt or lounge in their hammocks (ScF, 238). In Cayenne they ordinarily rise with the sun, and then their wives take down their beds and hammocks and hang them in the carbet, which is their kind of hall or outhouse, the props of which not only serve to support the roof, which is made of palm leaves, but also to hang up all the beds of the men and boys of the family and those of strangers, when at any time they entertain them. This carbet is placed 10 or 12 paces on the upper side of the cottage, in which the women always leave their own beds. . . . Some of these cottages have a loft above to hang their beds in at night, and then the lower part of the hut serves for the carbet. . . . In the hut the women make their cassava and ovicou, etc. In the carbet the men spend the day making bows and arrows, etc. (GB, 46).

932. The personal cleanliness of the Indian is proverbial. Thus, in Demerara, says Bancroft, a part of their idle hours they pass in bathing and swimming in the rivers, which they do in companies, without distinction of sex, several times a day (BA, 327). The Surinam Indians are a very cleanly people. They greatly delight in bathing, which they do twice at least every day, men, women, boys, and girls, promiscuously together. They are all excellent swimmers without exception. Among these parties not the smallest indecency is committed, in either words or actions (St, I, 384, 394). So also, on the lower Amazon, it is the habit of all Indians, male and female, to bathe early in the morning. They do it sometimes for warmth's sake, the temperature being often considerably higher than that of the air (HWB, 140). At all the malokas on the Caiary-Uaupes River, especially at the falls, there are regular bathing places marked by curious fences built of poles stripped of their bark, a material which, when rubbed with water, produces a froth like soap. With this the folk clean both their bodies and clothes, each person owning a little bundle of the bark (KG, II, 249). With the Island Carib, it was said of them that their first occupation before daybreak was to bathe in

fresh water. They believed that sea water would make them stink and encourage bile (PBR, 240). Im Thurn has rightly noted that Indians make a point of bathing immediately after every meal, apparently without ill effects (IT, 191).

933. To protect himself from the bites of mosquitoes many an Indian would anoint himself morning and evening with crab-wood oil. On the Orinoco the ointment was one of fat or oil mixed with powdered annatto (G, II, 192). During the crab "march," at the mouth of the Pomeroon and Moruca Rivers, about August month, the Indians will often plaster themselves with mud to withstand these insects. [The Mura Indians of the Amazon begrimed their bodies with black mud, which is smeared over the skin as a protection against mosquitoes (HWB, 166).] Gumilla records how some nations, like the Otomac, used a sort of curtain or tent (*pabellon*), made by the women out of its fiber (G, I, 170; II, 192), for sleeping under. In later times Humboldt also drew attention to the mosquito curtains of this same people (AVH, II, 280). [Perhaps this was of the same pattern as the modern sensoro variety of its hammock, the mesh-work of which hangs close when not put upon the stretch, described in section 477.] Others of the Orinoco Indians build their sleeping quarters adjoining their houses, such quarters being but small huts, very stuffy and with a triple covering, so that their nocturnal visitors can not gain entrance (G, II, 192). On the other hand, Crévaux on several occasions during the course of his journey speaks of the inhabitants always leaving the village at night and sleeping at a distance. In place of a mattress the Otomac would heap up some sand, brought from the coast, and after the manner of a bed, the father, wife, and children half buried themselves in it, their only covering being the curtain mentioned above (G, I, 170). [This must have been somewhat after the style of the copper-colored people at Higuerote, on the coast of Caracas, who slept buried in the sand (AVH, II, 280).] When sleeping on the sand banks the Indians of the Guaviar River stick into the sand a palm leaf or tree branch to protect themselves, in a measure, from the dew (Cr, 517). Bancroft noted how the Indians, to protect themselves from mosquitoes, made a great smoke under their hammocks in which they wrap themselves all over (BA, 237-238). Gumilla describes the Warrau as burning clods of ant bed, the comejen, with a similar object (Cr, I, 147). On the Orinoco it was only the Guajiva, Chiricoa, and Guama nations who slept on the hard ground without any covering, except the open air, a habit which led Gumilla to remark that there is nothing to which the human body can not ultimately get accustomed (G, II, 192).

934. Notwithstanding what has been said in favor of the Indian with regard to the cleanly habits adopted at meals, and to the regular-

ity with which he performs his ablutions, it must unfortunately be admitted that his head is often troubled with lice. A mother will often be seen searching her child's head for these vermin, and when picked off will crunch them in her teeth. Some say that this crunching will guarantee them freedom from this troublesome affection. "Notwithstanding this dirty habit," says Barrère, "the care with which they oil the hair, and often grease the body, they are always full of vermin" (PBA, 232). Chigoes (*Pulex penetrans*), when extracted, may share a similar fate on the teeth (Cr, 283). The Warrau on the Waini River often had to leave their settlements, owing to a scourge of chigoes (SR, I, 129). To prevent the torments of this creature, Indians daily anoint their feet until above the ankles with ruku mixed with crab-oil (App, II, 68). The following account of this pest, and the method of treatment, published over two centuries ago, will no doubt prove interesting and, as a medical friend assures me, useful: "Besides we were mightily vexed with a kind of worm which at first was like to a flea and would creep into the feet especially, and under the nayles, and would exceedingly torment us, the time it was in, and the more in the pulling out with a pinne or needle, if they were few. But one of our men having his feet overgrowne with them, for want of hose and shoes, was faine to submit himself to the Indians cure who, tying one of his legges first with his feete upwards, poured hot melted wax, which is black, upon it, and letting it lye upon it till it was thoroughly cold, they forcibly pulled it off; and therewithall the wormes came out sticking in the same, seven or eight hundred in number" (LC, 314). Bugs are said to have been introduced by the Negroes. I have never met with any native Indian term to express them. The cotton tassels on certain of the leg ornaments are considered a defence against ticks, lice, etc., which become entangled in them (sec. 552). Hiarimanni bush rope has long four-sided pods with seeds. It is said that if these seeds are scraped and rubbed on the toes it causes the bats, that attack that part of the body, to drop down dead (Da, 331). The Creole word for this plant was "bats'-bane" (BA, 102).

935. Both in the islands and on the mainland it was customary for the excreta to be buried. At a special place far removed from the house the Carib Islanders dig a hole in the ground and cover the excreta with earth (RO, 491). In Surinam the Indians will go to a distance from the settlement, scrape a small hole in the ground, cover again with earth, and clean the parts with sand. Those who live near the water dip in to clean themselves (WJ, 79). On the Orinoco, says Gumilla, at sunset the combined breakfast and supper is over. After eating the next business is to go wash and bathe again in the stream. From here each father of a family takes his mattock

or similar implement, and with all his household turns in a direction aside and digs as many pits as there are heads under his charge. When they have eased nature's call each one covers his pit with great care. This is a daily business, and is always done a little before or a little after sunset (G, 1, 173). On the Takutu, Schomburgk states that in the early morning the Wapishana relieve themselves of nature's requirements, whereby men and women show an extraordinary shame, in that they never relieve themselves in the presence of others. They cover everything with earth (SR, 11, 47). Among the present-day Makusi, Patamona, and Arawak a man will often accompany his wife, a father his son, a mother her daughter. In the Pomeroon and Moruca Carib and Arawak houses there is always a small pathway leading from the house to what may be called the latrine, which is but a log cut down, and on this the person squats. After a time, if the place becomes offensive, another log is felled in the immediate neighborhood, but the same pathway is always retained. These same people have a curious superstition about the tibia bee. They say that when in its flight this insect hits up against anyone and then falls to the ground, the person so hit must straightway go into the bush to ease himself, when this bee will come and cover his excreta for him. All through South America, says Spruce, I have noticed that when the Indian has a hard day's work before him and has only a scanty supply of food he prefers to go until night without an evacuation, and he has greater control over the calls of nature than the white man has. Their maxim, as an Indian at San Carlos expressed it to me in rude Spanish, is "Quien caga de mañana es guloso" (he who goes to stool of a morning is a glutton) (RS, 11, 454). Barrere talks of the Cayenne Carib males urinating in the squatting position (PBA, 164). I have seen the same practice with the Patamona and Makusi.

Whenever an Indian passes near to or smells exposed excreta, a decomposed carcass, or anything else equally offensive, he will turn aside and spit. By spitting he used similarly to express his aversion to the Negroes (SR, 11, 194).

The young girl-folk are so accustomed to keep their legs close together that, whatever position they assume, one can notice nothing at all, not even the least signs that they are indisposed; even when, according to custom, they sit on the ground they know how to tuck the leg in a funny way under the body with the result that, even on stooping over them, the eye can not be offended (BER, 21).

Even up to my day Pomeroon Arawak and Warrau women during menstruation used to retire at night to a small outlying shed (where they might likewise be delivered). Such a shed would be distinguished by a tassel or two of spent *ite léaf* (i. e., after removal of the outer fiber) being hung up outside from a rafter.

CHAPTER XXXVII

RECOGNITION OF TIME, SEASON, NUMBER, DISTANCE

Time: Recognized by special events; the year fixed by the Pleiades (936).

Seasons for ripening of certain fruits, clearing lands, hunting particular animals, prognosticated by stars and constellations (937); wet and dry seasons (938).

Enumeration: Strings, sticks, stones (939); conceptions of the higher numbers (940).

Distance (941).

936. To indicate periods of time past Indians will refer to some special personal event, their entrance into this life, "When my eyes open," "When I first catch myself," "When I begin to crawl," etc. The Surinam bush Negroes speak of the age when a boy can carve a paddle or make a corial (KM, 27). Schomburgk expresses the certain conviction (SR, I, 174) that his visit to the Warrau on the Waini, the first occasion on which these people had seen white individuals, must have opened a new era for them in the sense of affording a reckoning period to start from. To indicate time very long past, the Surinam Carib will use some such expression as "before the grandfather of my grandmother was born." When at sunset, and after the stars show themselves, the Pleiades rise from the east, then their [Orinoco Indian] new year [the wet season] begins, and in their commercial relations (*tratos*) it is usually the time for settlement (G, II, 281). The Cayenne Galibi (PBA, 179; Cr, 215), the Surinam and Island Carib (PEN, I, 103; RO, 451) also reckoned the year by this constellation, an arrangement which I have likewise found customary among the Arawak and Warrau of the Pomeroon. Hence from east to west of the Guiana area, from the Orinoco to Cayenne, the reappearance of the Pleiades or "Seven-Star" on the eastern horizon soon after sunset (December) constitutes the passing of a year.

937. The year is divided not into months but into seasons according as the more important economic animals and plants after which they are named breed, reach maturity, bear fruit, etc. These seasons follow each other in regular succession year by year, according as certain stars and constellations make their appearance, take up a certain position in the sky, or even disappear. That is to say, the presence and position of various stars are associated with particular seasons. [Penard gives a list of these seasons (PEN, I,

103) for Surinam.] More than this, each such star is the permanent home of, in fact actually is, the spirit of that same flesh, fowl, tree, or plant which is then in season, and into which it changes or passes. This spirit is called tukuyuha, or -kuyuha (in composition) by the Arawak, and yumu by the Carib. It travels from its star to a particular spot on earth, to a breeding place, where it congregates with others of its kind ready to take up its temporary residence in the newly born or fruiting organism which it thus endows with life and activity and only leaves at death, when it returns to its heavenly home. The ordinary Arawak term for star in general is wiwa, i. e., what shines, glistens, etc., but certain ones, on account of their always assuming a fixed position in the sky when the animal or plant whose spirits or kuyuhas they provide a temporary home for are in season, are particularized as kamma(tapir)-kuyuha, waremedo (sloth)-kuyuha, buruwe(bullet tree)-kuyuha, etc. The breeding places on earth where the kuyuhas specially assemble, ready to breathe the breath of life over animal or plant, receive names identical with those of their spirit-derived star. Thus, we have just spoken of the kamma-kuyuha star, which is the home of the body spirit of the tapir. Now, there is a creek on the left bank of the Demerara River called the Kammakwear (a corruption of kamma-kuyuha), which points to the fact that at some previous period, or possibly even now, at a certain season of the year when its namesake star reached a definite point in the heavens, the female tapir and its young were very plentiful in that area, i. e., it was a recognized breeding ground of that creature. There are several such spots still retained in the local place names. Thus there are the Kassa (porpoise)-Kwia (a branch of the Kamuni), the Oma (pirai fish)-Kwia, the Baremo (giant anteater)-Kuia, the Tibikuri (species of fresh-water edible fish)-Kuyuha, etc., creeks on the Demerara River; the Vacca(Spanish, cow)-Kuyuha Falls, on the Corentyn. This correlation of star with animal or plant was, of course, more or less known to the laity, but it was the piainen who were most intimately acquainted with it, and ran their knowledge for all it was worth in the way of prophecy when and where game might be hunted with success. With the disappearance, however, of these comparatively enlightened individuals and the influence of the non-pagan missionary, the stellar lore has been gradually lost. Indians of the present day know but a few of the economically important stars and constellations, while only here and there is to be met an individual acquainted with some of the legends and tales connected with the most conspicuous and striking ones. The Carib of the upper reaches of the Pomeroon and Moruca Rivers, living, to my own personal knowledge, practically isolated lives from year's end to

year's end, will know exactly when to come down to the coast for the crab season, striking it certainly within 24 hours of the time when the crabs begin to march (sec. 220). The division of the year into months, for which there are no distinguishing Indian terms, is, of course, secondary, and thus we can understand Gumilla's statement that the Orinoco Indians distinguished each month by the fruits that matured in it, every month of the year having its particular kind (G, I, 307). Schomburgk's assertion that the Makusi divide the year up into months, each beginning and ending with the new moon (SR, II, 328), is somewhat more difficult to appreciate in that the Makusi are but an offshoot of the Carib, who certainly did not distinguish portions of the solar year by any lunar divisions. Considering that this traveler spent most of his time with the Makusi, that his interpreters, one of whom he took to England, were Makusi, it is more than likely that his statement was derived from sophisticated sources.

After year and season, the next division of time was day and night. As with all the tribes, each day may be divided according as the sun has risen, is high, is exactly above us, or has completed its circuit, intervals being distinguished by its occupying such and such a position in the heavens and pointing to it (SR, II, 328).

938. Of course, the knowledge of the approach of the wet and dry seasons, for which the Makusi (SR, II, 110, 111) and others had special names, is of paramount importance to the Indians, their very existence, in the way of preparing a sufficient food supply from their fields, being dependent upon it. In addition to the information to be gleaned from the stars, such knowledge, in the majority of cases, is based upon various phenomena observed to take place both in the vegetable and animal world. Among the former I need only mention the budding of the ite-balli [*Vochisia tetraphylla* D. C.] and hackia (*Tecoma* sp.) trees, which is a sure sign of the approach of wet weather (Ti, June, 1882, p. 127). Among the latter, the following are all interesting examples: "The generality of our Indians maintained still that two moons would have to elapse before the rain set in. Only an old Carib was of a different opinion. He told us that we might soon expect it, and gave as a reason for his opinion that the turtles were so far advanced toward perfection that the rain might set in, in the course of a week. He was correct in his conjecture, and we had only to regret that we did not consult him previously" (ScG, 215). This prognostication of the weather by the size of the young turtle appears to be well known among the Indians generally (SR, I, 303). The following passage is taken from Hillhouse: "I began to suspect that the dry season was nearly over, and, upon questioning the Indians they told us that of course

it was so, or the people would not otherwise have beat the hai-ari [fish poison]. In fact, it appears that in the immediate vicinity of the mountains they can calculate to a certainty within a few days the breaking up of the seasons" (HiA, 38). The appearance of the winged kushi-ants (SeE, 174) and that of certain beetles, e. g., *Phanæus* and *Copris*, especially *P. mimas* (SR, II, 112), are the sure harbingers of the rainy season. The croaking of the rain frog, *Hyla venulosa* Daud, the kobono-arú of the Carib, is a certain sign that rain can be expected in the next few days (SR, II, 419). On the Berbice, "when the Indians see the sawyer beetle [*Prionus cervicornis*] at its work, they know that it is time for them to cut down a portion of the forest, to prepare their fields, for it is then the commencement of the sunny season" (Da, 15). On the Corentyn, Brown relates that he frequently observed a large species of dragon fly tossing out large drops of water from small pools in the hollows of rocks with the extremity of its abdomen as it hovered over them. The men said that when these insects bailed out water in that manner it was a sign that the dry season was at its height (BB, 356).

939. Though the Indians have no conception of weeks nor names for days, they measure intervals of less than a month by means of the number of days intervening, and for this purpose employ various apparatus—strings, knotted or beaded, sticks, and stones, etc. Thus, debtor and creditor, husband and wife, etc., will give one another a similar knotted cord, each knot corresponding with a day. Every morning the first business with both parties is to untie one of them. In trading, each one then hastens to fulfill his bargain; those who can not pay make their excuses and arrange a new cord or new payment day (G, II, 281). When the chief proposes giving a party, he gets prepared a number of strings similarly marked with knots or threaded with beads, the number of knots or beads corresponding with the days intervening. One of these strings he retains in his own possession. The others he sends by messenger to each of his guests, the messenger delivering all other details orally. The same article holds good for all private concerns and business matters, as Schomburgk records (SR, I, 203) for the Warrau on the Barima. Waterton gives the converse picture, the guests in this case notifying the host: When two or three families have determined to come down the river and pay you a visit, they send an Indian beforehand with a string of beads. You take one bead off every day, and on the day that the string is beadless they arrive at your house (W, 233). When a son leaves his aged and dependent parents to go on a journey he will give them a string with a number of knots in it, one of which is to be untied every morning, and he will arrive, if well, on the day on which the last is untied (Br, 238). So, again, the

Indians in French Guiana use knots made on a long cord or string for all their calculations (FE, 87). The Arawak term *ekkishihi*, i. e., a sign, etc., was employed to denote these strings, the sticks being distinguished as *adda-(ek)kishihi*, i. e., wood signs. The sticks were either notched, e. g., among the Makusi (SR, I, 203), or had small holes drilled in them, each notch or hole corresponding with an intervening day. "He then notched in a bit of wood the number of days, which he gave her. Each day she was to cut off a notch, so that her tablet would correspond with the remaining days of absence" (Da, 268). Wallace aptly compares this notching of the stick with what English boys do at school on the approach of the holidays (ARW, 254). Where holes were drilled, as I have noted among the upper Pomeroon Carib, a small peg was shifted from one to the other as each day was brought to a close. In addition to the use of strings and sticks, the Island Carib had a system of placing the requisite number of stones or peas in a calabash and taking one out daily (RO, 467). On the mainland, at the River Oyapock, the stones, etc., were replaced by sticks. Thus Harcourt writes: "When they appoint or promise anything to be done by a time limited, they [Indians] will deliver a little bundle of sticks equal to the number of dayes or moones that they appoint, and with themselves keepe another bundle of the like number. And to observe their appointed time, they will every day or Moone take away a sticke, and when they have taken away all, then they know that the time of their appointment is come, and will accordingly perform their promise" (HR, 376). Gumilla records how all the Orinoco nations counted up to five; then five+one, five+two, etc.; ten=two fives; fifteen=three fives; the fives being represented by a hand, two hands, one or both feet, etc. Thus, in the Achagua [Arawak stock] language *abacaje*=5, i. e., the fingers of the hand; *juchama-caje*=10, the fingers of both hands; *abacaytacay*=20, the digits of hands and feet; *juchama-tatacay*=40, the digits of two men; and so on (G, II, 281). Brett reported the same thing for the Pomeroon Indians (Arawak), and Schomburgk for the Makusi (SR, II, 327).

940. But it does not follow that because all these Guianese Indians have conceptions of the higher numbers that they have names for them. Far from it. The Kalia, at the sources of the Paragua, have but one numeral, *meyakan*, which is repeated as they count on the fingers, and then on the teeth (KGG, 458). On the upper Parou River, Cayenne, for instance, the Roucouyenne [Carib] only know how to verbally express three numbers: *ouïni*, one; *sakéné*, two; *hélé-ouaï*, three; beyond this they show the fingers and toes, and when the number is over 20 they say *colepsi*, which is a diminutive

form of *colé*, much (Cr, 299). Again, numerals in many tribes reach only as far as 20, on a basis of fingers and toes. Commencing with the former, every higher number is called "plenty." Only a few tribes, like the Arawak, count to 100 (SR, II, 327). Bancroft also tells us that the Indian method of numeration is by units, tens, and scores, until they reach an hundred, after which they have no exact method of expressing the number of objects, but usually do it by showing such a quantity of hair as they think has the nearest relation to the numbers of which they would convey an idea (BA, 335). A similar interesting record comes from French Guiana: . . . "Having asked an old woman how many cottages there were on one side to which we pointed, she told us there were 10. Then, pointing toward the quarter where their chief dwelt, she took a handful of her hair to signify to us the great number of cottages there were on that side. This is their common way of expressing things they can not number, saying *enoura*, which signifies "thus much" (GB, 30). The Carib Islanders also expressed very large numbers by taking up a liberal quantity of hair or of sand (RO, 454, 467).

941. Distance from one place to another is reckoned, among the Makusi, by the number of nights that are occupied on the journey (SR, II, 328). An interesting expression for the idea of proximity is furnished by Humboldt, from Indians of the upper Orinoco, whose continually repeated answer was that the sources of the Rio Negro and the Inirida were as near to each other as "two fingers of the hand" (AVH, II, 406). If the distance to be traversed is less than a day, they sound the word *hop-pah* in a peculiar way, by dragging onto the first syllable at the same time that they describe the sun's course as far as the zenith, and then with the second syllable lower it toward the point at which the sun will be at the time of arrival (SR, II, 328).

INDEX AND GLOSSARY

[Figures indicate section numbers.]

- ABANE, ABANO. *See* Baniwa.
- ABIPONES, one of the tribes of the Gran Chaco, now extinct.
- ABIYWERI. *See* Moronobea.
- ABLUTIONS, of corpse, 857; of sick person, 922.
- ABORTION, 908.
- ABSCISS, treatment of, 929.
- ABUYA. *See* Bush hog.
- ACCOUCHEMENT, 904-906.
- ACHAGUA, on the Rio Ele, a branch of the Meta. Hardly 100 of them remain; they form no tribe but live as laborers under the whites (KGG, 470). Of Arawak stock.
- ACHOTE. *See* Bixa.
- ACHRAS SAPOTA, sapodilla, 247.
- ACOQUA (GB, 29) of Cayenne, who have since disappeared (Cr, 117).
- ACOUCHI BALSAM. *See* Protium aracouchili.
- ACOURI, CUTIA (*Dasyprocta aguti*), hunted, 164; tamed, 716; tooth knife, 733, 736, 748.
- ACRODICLIDIUM CAMARA, for diarrhoea, 927.
- ADDA-DA, Arawak name for wood skin.
- ADENOPORIUM GOSSYPIFOLIUM, emetic, 920.
- ADJUNCTS, FOOD, chap. xiii.
- ADMIRAL OF FLEET, 741.
- ADOLE, or ATURE, as they call themselves. They live 50 leagues farther up the Orinoco from the Rio Meta (G, I, 291). Chaffanjon states that these have become extinct (BRI, 266). Of Saliva stock.
- ADOURI (*Dasyprocta acuchy*), hunted, 164.
- ADULTERY, 733.
- ADVANCES ON GOODS TO BE DELIVERED, 820.
- ADVERTISING TRADE, 822.
- ADZE. *See* Stone.
- AEOLIAN MUSICAL INSTRUMENT, 572.
- AETA. *See* Ite.
- AFFECTION FOR CHILDREN, 911.
- AGAVE, WILD, seeds used as fish poison, 209.
- AGED AND FEEBLE, neglect of, 917.
- AGOUTI, AGUTI. *See* Acouri.
- AGRICULTURE, chap. xii.
- AGUAYA. *See* Akawai.
- ABOUAI SEEDS, for "bells," 574; leaves for thatch, 312.
- AJANA. *See* Oyana.
- AJOUPA, a temporary bush shelter, 298.
- AKA. *See* Akawai.
- AKAI-KARA BAMBOO FLUTE, 560.
- AKAUSGATIN (Ara.), the spiral weft of the hexagon-base baskets, 412.
- AKAWAI (SR, II, 452), ACCAWAI (BRI, 254), ACCAWAY (HiC, 232), ACCAWAU (BA, 266; St, I, 379). ACCAWAW (St, I, 404), AGUAYA (StC, II, 51), ACAWOIO (Br, 280; Da, 216), ACKAWOIO (Br, 276), ACKAWOI (Ti, II, 1883, p. 298), OKAWALHO (EU), WAKAWAI (SR, II 454), WACCAWAI (ScO, 208), WAYKA (HiB, 331), WAIKA (SR, II, 454), GUAYCA or GUAICA of the Spaniards (Br, 277). WAIKA is the term applied to the Akawai by the Arawak, and WACCAWAI is what they call themselves (ScO, 208), though it is said that, to particularize themselves as a multitude or crowd, they used the term Kapohn or Kapong. [In British Guiana, about the middle of the last century] the localities inhabited by the Akawai extended from the Essequibo and its tributaries westward and north-westward round to the heads of the Waini, Barama, and Barima; others lived to the eastward, on the upper Demerara and Berbice (Br, 277). But since that time there has been a marked diminution both in their numbers and limits. Of Carib stock.
- AKAWAI NUTMEG. *See* Acrodictidium.
- AKKAMARABASSA (War.), the cotton anklet, 552.
- AKKESOA-HU (Ara.), enema made of animal's bladder, 921.
- AKKO-YURO (Ara.), *Astrocaryum tucuma*, fruit eaten, 247; oil, 25; basketry and plaitwork, 100, 103; twine, 72; seed shell cut into child's bracelet, 541.
- AKULEDAHU (Ara.), pattern of feather fixation on arrow, 132.
- ALGAROA GUM. *See* Hymenaea.
- ALLAKO-IDDE, black body paint, 30.
- ALLAMANDA AUBLETHI, emetic, 920.
- ALLIGATOR, fat, 253; hunting of, 217; figured pottery, 96; scale headbands, 530.
- ALUKUYANA. *See* Roucouyenne.
- AMAPAIMA. *See* *Cryptocarya pretiosa*.
- AMARA. *See* *Schwartzia*.
- AMBUSCADE IN WAR, 763.
- AMPULLARIA, species of snail eaten as "pick-me-ups" after a drinking spree, 221, 281.
- AMUSEMENTS, GAMES, SPORTS, chaps. xxiii, xxiv.
- AMYRIS, resin as medium for body painting, 512. *See* Protium.

- ANABALI (G, I, 206), on the Apure, a Betoya stock.
- ANACARDIUM SP. CASHEW, cultivated, 246; made into a fermented drink, 267.
- ANANAS SATIVA, pineapple, cultivated, 246.
- ANAXAGOREA SP. *See* Yarri-yarri.
- ANGER, expressed by ants worrying a corpse, 841.
- ANIMAL, food, search, and preparation, chap. xi; domestication, chap. xxv.
- ANNI, timber used for boats, 794.
- ANONING, body, 511; visitors, 809.
- ANONA MURICATA, soursop, 247.
- ANONA RETICULATA, custard apple, 247.
- ANOTA. *See* Bixa.
- ANT, eaten, 225; secret poison, 734; expression of anger, 841.
- ANT BEAR, giant anteater, 166; claw used for whistle, 569.
- ANT BED, burnt as protection against mosquitoes, 933.
- ANT BITE, counterirritant, 926; ordeal for hunting, 162; for captaincy, 745, 746; for marriage, 884; punishment, 739; salutation, 805.
- ANTHROPOPHAGY. *See* Cannibalism.
- ANTHURIUM ACAULE, leaves for thatch, 324.
- ANTHURIUM MACROPHYLLUM. *See* Pothos.
- ANTIDOTES FOR POISON, curare and cassava, 930.
- APALAI, of the middle and lower Parou River, Cayenne. Coudreau makes many references to them. Of Carib stock.
- APBIBA GLABRA, timber for fire sticks, 1.
- APIKA, wooden bench of the Oyana, 328.
- APOUROU, a tribe which used to inhabit the lower Yary, and whom the old geographers described as Piriou (Cr, 234), or Pirio (GB, 29). Carib stock.
- APPROACH TO SETTLEMENT, notice of, 803.
- APRON, 546; bark, 547; bead, 78, 549; seed, 549; cloth, cotton, etc., 548; miscellaneous, 550.
- APURRTA (Mak.), circular bone or shell disk through which the strands of the armlet pass, 540.
- APUTU, Carib term for club, 153.
- ARA. *See* Arawak.
- ARADU (Wap.), knapsack, 450.
- ARAKODAK, ARIKODAKO, nonfermented drink, 271.
- ARAOTE. *See* Warrau.
- ARAPAIMA. *See* Warapaima.
- ARAWAK (ScB, 175), AROWAK (GO, I), ARUACA (G, I, 154), ARRAWAK (StC, I, 308), ARROWAUK (BA, 270), ARUAK (KG), etc. Call themselves Lokono, i. e., people. On the Pomeroon it is said that their name is from aru, the word for cassava, for which they are believed to have such a reputation. The Arawak stock of languages is the most widely disseminated of any in South America. It begins at the south with the Guanas on the headwaters of the River Paraguay. . . . All the Antilles, both Greater and Less, were originally occupied by its members, and so were the Bahama Islands. . . . Its tribes probably at one time occupied the most of the lowlands of Venezuela, whence they were driven not long before the discovery [of America] by the Carib, as they also were from many of the southern islands of the West Indian Archipelago. The latter event was of such recent occurrence that the women of the Island Carib, most of whom had been captured from the Arawak, still spoke that tongue (BRI, 241). About the period of the discovery of America there was an Arawakan colony in Florida (*Handbook of Am. Indians*, part 1, p. 74). Their settlements [on the Guianas] are scattered in an extended line, generally within 100 miles of the sea, from the Orinoco to the Maroni (Br, 58).
- ARCHED OR VAULTED, house, 299; scaffold for drying kokerit leaves, 322.
- ARDEA. *See* White heron.
- ARE. *See* Arekuna.
- ARECINEA, reed for blowgun, 117.
- AREKUNA (SR, II, 208), ARECUNA (Br, 277), ARICUNI (Da, 216). Used to occupy the lands drained by the Uaupes River. They now occupy the mountains and savannas of the sources of the Caroni, Cuyuni, and Mazaruni (SR, II, 208). The branch of them around Roraima, etc., in British Guiana are known as Taulipang or Taurepang (KGG, 454).
- ARIMARAKA (Makusi), name for dog, 717.
- ARISAURU (*Pterocarpus gulanensis*), pericarps used in fish-poison balls, 211; pigment, 28.
- ARMADILLO, associated with snake, 165; hunted, 165; basketry pattern, 431-433; carved out of kokerit seeds, 535.
- ARMLET, 540.
- ARMS, CALL TO, 758, 759.
- ARNATTO, ARNOTTA, etc. *See* Bixa.
- AROID LEAVES, for thatch. *See* Anthurium.
- AROSUTAHU, Arawak name for falca, 792.
- ARRECOCCERRA (*Protium aracouchili*), plaster for wounds, 929.
- ARRISAURA. *See* Arisauru.
- ARRIVAL OF VISITORS, 805.
- ARROW, classification, 134-144; manufacture, 128-133; release, 145; shooting, 146, 190; call to arms, 759; in warfare, fire arrows, 764; games with bows and arrows, 609, 610; poison, 123, 217.
- ARROW REED (*Gynerium*), cultivated, 246; knife, 905; poison, 123.
- ARROW TIGHTENER, 130.
- ARROW TRAP, 160.
- ARTIFICIAL-FLY BAIT, 192.
- ARTIFICIALLY COLORED FEATHERS, 84.
- ARU, Warrau name for ite starch or cassava, 233.
- ARU-ARANI. *See* Phyllanthus.
- ARTBE SAUCE, 249.
- ARU-HOHO, Warrau harvest dance, 585.

- ARU-HUBA, Warrau name for cassava squeezer, 345.
- ARUM, poison from, 735.
- ARUNDINARIA SCHOMBURGKI, for blowgun, 117.
- ASHES, tobacco, 283, 284.
- ASHIRITAI (Ara.), jagged simple-head arrow, 135.
- ASPIDOSPERMUM EXCELSUM, paddle wood or yaruru, 799.
- ASSAI, nonfermented drink made from Euterpe oleracea, 270.
- ASTROCARYUM, oil, 25; twine, 72; fruit eaten, 247; basketry, 100; bowstring, 127; spine for tattoo, 510. A. tucuma (See Akko-yuro), A. tucumoides (See Awarra).
- ATELES, couata, etc., monkey, hunted, 170; rendered unconscious with curare, 716; tamed, 722; hair for girdles, 543.
- ATOMO, Arawak name of harpoon arrow, 142.
- ATORAI, ATORYA, ATTARAYA (HiA, 26), ATORRAIDI (Cou), ATORAD (JO). I believe these are identical with the Daurai, Dauri (ScE, 166), or Tauri, though Schomburgk, in speaking of them as having reached the evening of their life as a people, evidently differentiates them (SR, II, 388). The Atorad are called Saichiko by tribes farther south (JO). On the Guidaru (ScE, 162). Arawak stock.
- ATTA [OECODOMA]. See Kushi.
- ATTACK, methods of, 762-764.
- ATTALEA FUNIFERA, cordage, 72.
- ATTALEA SPECIOSA, curua palm, pinnules for boxes, 28, 387.
- ATTUPA, name for cassava squeezer, 345.
- AUTURE. See Adole.
- AUGURY, frogs and toads kept for, 725.
- AURI, AURIES. See Mute dog.
- AUTHORITY, symbols of, 751.
- AVOCADO PEAR, Persea, cultivated, 246.
- AVOUROU. See Tairou.
- AWARRA, Astrocaryum tucumoides, oil, 25; fruit eaten, 247; basket and plaitwork, 100, 103; for hammocks, 461; seed used for drumstick, 578; cut into finger rings, 542.
- AWARRIBE, Wapishana name for fan, 366.
- AWIARRI. See Harri-harri, 560.
- AX, stone, 6, 7; tortoise shell, 10.
- AYRICO (G, I, 201), AIRICO, on headwaters of the Manacacia, the Elè (a branch of the Meta) and Guainia (BRI, 273). All extinct now (KGG, 470). Betoya stock.
- BABOON, the almost invariable Creole term applied to the howler monkey (Mycetes).
- BARRACOTE, a small 3 or 4 legged wooden staging upon which the meat is laid to be smoke-dried, 163, 333.
- BABY HANGING-CHAIR, 913.
- BABY SLING, 55; chap. xx; string figure, 704.
- BABYHOOD, chap. xxxv.
- BACK ORNAMENTS, 537.
- BACTRIS, paripi or peach-palm, 246.
- BAG, 388.
- BAGRE, SILURUS, caught with red cloth, 189; knocked over with cudgels, 190.
- BAIL, Wapishana name for arrow, 128.
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- BAIT, seeds for, 188; red cloth, 189; red macaw feathers, 192; artificial fly, 192.
- BAIYARI-SHIRI (Ara.), "fish-comb" type of fan, 367.
- BAI-YAURO, Warrau name of paiwarri, 257.
- BAKING OVEN, SLAB, GRIDDLE, 361-363.
- BALATA. Mimusops, sp. Cement, 23; for stone-chip graters, 335; fruit eaten, 247; bark for wood-skins, 798.
- BALL, clay, for eating, 253; leaf-strand figure, 621; playball, 602-606.
- BALSAMS, 23.
- BAMBA. See Benta.
- BAMBOO, arrow-poison, 123, 217; box, 385; flute, 560, 561; knife, 14, 516, 905.
- BANAB, temporary shelter, 293; string figure, 676.
- BANANA, cultivated, 246, 268.
- BAND, FOREHEAD, 530.
- BANDOLA. See Harri-harri, 560.
- BANDS, cords, twine; cotton, chap. lii; other than cotton, chap. iv.
- BANISTERIA, Caapi, 288.
- BANIVA, VANIVA, BANIWA (KG), ABANE (G, I, 250). On the River Atabapo (Cr, 531). Arawak and Betoya stock.
- BAR, pattern of feather fixation on arrow, 132.
- BARAHISA, BARISA. See Bignonia.
- BARAMALLI. See Pump wood.
- BARB, arrow, 129.
- BARBASCO, Spanish name for vegetable fish poisons in general, 208.
- BARBECUE. See Babracote.
- BARE, BARRE, an Arawak stock on the River Casiquiare.
- BARIRI-OBADA (Ara., chicken-hawk claw), pattern of feather fixation on arrow, 132.
- BARK, apron, 547; band for knapsacks, baskets, etc., 455; corsets, 543; head ring, 530; mats, 401; pestle and mortar, 381; shirt, 539; trumpet, 558.
- BARKING, dogs not, 717.
- BARRANCA, BARREIRA, steep river bank.
- BARTER AND TRADE, chap. xxxii.
- BASCARA, fish poison, 209.
- BASIN BASKET, 440.
- BASKET, of specially prepared strands, 412-447; adaptations of natural forms, 453-457; classification, 448; cover work, 449; trumpet, 559; patterns and designs, 105-114; types of base, hexagon, 412-415; circular or oval, 416-421; conical, 423, 424; and rectangular, 425-447; string figure, 666.
- BASKETRY, woman's share in, 900; feather crowns, 519-527.
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- BASSO (War.), "landing-net" basket, 423

- BASTARD BULLET TREE. *See* Humiria.
 BAT, string figure, 682.
 BAT'S BANE, 934.
 BAT'S FINGER. *See* Homalium.
 BATELAO, a large bateau.
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 BELTIRI, drink, 259.
 BENCH, domestic, 328-331; for acouri, etc., 164.
 BENTA, monochord musical instrument, 571.
 BERRIA, drink, 261.
 BERTHOLLETTIA, "Brazil-nut," 247; sap-wood for calking, 796.
 BÊTE-ROUGE, body vermin, 512.
 BETOYA, BETOI, on and near the Casanare, a branch of the Meta. All extinct now (KGG, 470). A linguistic stock that derived its name from a tribe dwelling at the foot of the mountains of Bogota, between the Rivers Apure and Tame.
 BETROTHAL, 868.
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 BOTTLE-SHAPE BASKET, 415.
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 BOW-STRING, 127; bow-string puzzle, 713.
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 BUCK, BUCKEEN, the Creole name for male and female aboriginal Indians, respectively, 792.
 BUCK SHELL, a corial, 792.
 BUCK-SICKNESS, ulceration, etc., of the protruded bowel after dysentery, with a usually fatal issue.
 BUCK-WAX. *See* Moronobea.
 BUGS, not indigenous, 934.
 BUIÁGANA, on the upper Apaporis and Tiquie. Betoya stock.
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 BULLET-TREE, bastard. *See* Humiria.
 BÚNIA, stinking bird, Ostinops sp.
 BUPRESTIS, wing cases as bells, 575.
 BURAKURA, BURUKURU, BUKOKORO. *See* Brosimum.
 BURE-AKWA, gourd flageolet, 565.
 BURGOS SP., for shell beads, 73.
 BURI, timber for fire stick, 1.

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- BURIBADDA. *See* Homalium.
- BURUBURULI, red pigment, 28.
- BUSH, string figure, 690.
- BUSH-COW. *See* Tapir.
- BUSH-HOGS, hunted, 167, 272; tamed, 723; head carried in Parishara dance, 593; hoofs as bells, 575.
- BUSH-MASTER SNAKE, Lachesis, basketry design, 445.
- BUSH RAT, trap for, 172.
- BUSH ROPE, climbing vine used for, 72; ladders, 787.
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- BUTU. *See* Aputu.
- BUZZER TOY, 619.
- BYRSONIMA CRASSIFOLIA, for fevers and dysentery, 927; snake bite, 929.
- BYRSONIMA SPICATA. *See* Hitchia.
- CAAPI. *See* Banisteria.
- CAAPIM DRINK, 265.
- CABANE, suspended wattle bed of Island Carib, 458.
- "CABBAGE" TOPS OF CERTAIN PALMS, eaten, 247.
- CABBAGE-TREE WORM. *See* Gru-gru.
- CABECEIRA, a spring rivulet.
- CABERRE, CAVERRE, Indians who gave the name to the Guayabero [Guaviar] River. Reach up to the Ariari River (G, I, 251), from the Zama River and Orinoco near It. Arawak stock.
- CABIMA. *See* Copaifera.
- CACAO, timber for fire sticks, 1; cultivated, 246.
- CACHACA, rum.
- CACHAMA FISH, knocked over with cudgels, 190.
- CACHIRI. *See* Cassiri.
- CACHOEIRA, CAXOEIRA, falls, rapids.
- CACHOUROU, a name for clothes, beads, etc., 546.
- CACIQUE, the chief of a nation, 740.
- CACOARI, fish weir, 203.
- CAGE, CREEL, for fish, 204-206; method of manufacture, 421.
- CAIMAN, KAIMAN. *See* Alligator.
- CAIRNS, 779.
- CAKES, CASSAVA, 236.
- CALABASH, cups, vessels, 384; flageolet, 565; organ, 571; fruit for bait, 192.
- CALADIUM ARBORESCENS, moku-moku, bait for manati, 169; and for fish, 188, 192; employed in eye disease, 927; and sting-ray wounds, 929.
- CALALOO, berries for bait, 192; leaves eaten, 234.
- CALANDRA PALMARUM, gru-gru, grub of this beetle eaten, 224.
- CALATHEA, used in manufacture of cassava squeezer, 345.
- CALEMBA, CALEMBE, CALIMBE, loin cloth, 548, 550.
- CALENTURA, fever, 918.
- CALL, to arms, 758, 759; for birds, 180.
- CAMISA, loin cloth of Surinam Indian males, 548.
- CAMO, dance of the Otomac, 594.
- CAMP FOLLOWERS, 761.
- CAMPOS, CAMPINAS, sandy or stony areas with scanty or stunted vegetation.
- CAMUDI, boa constrictor, basketry pattern, 444.
- CAMUIRRO, edible palm, 247.
- CANA BRAVA. *See* Arrow poison, 123, 217.
- CANAOA, CANOA, Island Carib name for the larger boats, 792.
- CANDELABRUM TREE, Cecropium palmata, 287.
- CANDLE. *See* Torch.
- CANE-JUICE DRINK, 267.
- CANE STICKS, for cord making, 53, 54.
- CANETA, hat fillet, 530.
- CANIME, OIL OF. *See* Copaifera.
- CANIS AZARE, indigenous dog, 717; C. cancrivorus. *See* Maikang.
- CANNIBALISM, 768-773.
- CANOE, 792-797; for cassava, 344.
- CAP, feather, 528; truli-palm spathe, 518. *See* Crown, Hat, etc.
- CAPITAN. *See* Tamuchi.
- CAPOEIRA, site of a former settlement now covered with rank vegetation.
- CAPSICUM, "peppers," cultivated, 246; in eye disease, 927; stimulant in headache, etc., 289; at Parishara dance, 587, 591; burnt in warfare, 764.
- CAPTAIN, on islands, 741. *See* Chief.
- CAPTURE OF WIFE, 872.
- CAR. *See* Carib.
- CARABA. *See* Carapa.
- CARACAMATA SEEDS, for bait, 188.
- CARACOLI, metal-work, 85; chest ornament, 537; symbol of authority, 751.
- CARASNA, CARAGNA, CARANNA, CAREGNE. *See* Protium.
- CARAPA GUIANENSIS, oil, 25; for body anointing, 511, 933; medium for painting, 512; seeds used as bait, 188, 192; timber for boats, 794.
- CARASISI. *See* Maikang.
- CARAWELU, CARAWERU, CARAYURU. *See* Bignonina.
- CARBET, hall, outhouse, common room, strangers' house, etc., of Cayenne and Island Carib, 807, 811, 931.
- CARIA SEEDS, eaten, 247.
- CARIB. The name of Carib, according to Humboldt, who reports finding it for the first time in a letter of Peter Martyr d'Anghera, is derived from Calina and Caripuna, the *l* and *p* being transferred into *r* and *b*. It is very remarkable, he says, that this name which Columbus heard pronounced by the people of Haiti was known to exist at the same time among the Carib of the Islands, and those of the Continent (AVII, III, 78).

- The people call themselves Carina, Calina, Kaliya and Callinago. The French and Germans have transformed the name into Caraïbes (AVII, 1, 335). Calina is what the Oyampi (Carib stock) of the Oyapock River Cayenne call one another among themselves (Cr, 174). It is the Roucouyenne (Carib stock) term for a friend (Cr, 89) and is constantly used by them to signify their companions; i. e., all the individuals of the Indian race (Cr, 360). Crévaux employed the term to a Roucouyenne chief who was preparing to shoot an arrow at him, and so made friends (Cr, 99). It is also a word used by the Carijona (Carib stock) on the upper Yapura (Cr, 360). The word Carib is frequently applied by the Spanish population to any wild tribe, merely in the sense of savage or wild (BRI, 161). Other spellings are Cariva (G, 1), Caribe (G, II, 58), Carive, Charib (Pnk, 1, 513), and Galibi, a Carib stock in Cayenne; in its lengthened form we find Caribbee (BA, 253), Charibbee (Pnk, 1, 513), Carabisi (ScO, map), Caribisce (HiA, 39), Karabish (StC, II), etc. Arawak may call Carib by the name of Bassari and Koréjiki. The meaning of the former is unknown; that of the latter is significatory of their characteristic red paint. The word Cannibal is but a mispronunciation of their proper name Karina (BRI, 256). The Carib linguistic stock is one of the most extensively distributed in the Southern Continent. At the time of the discovery of America its dialects were found in the Lesser Antilles, the Caribbee Islands, and on the mainland (BRI, 251). Santa Cruz was the most northerly island formerly inhabited by the Carib (DAC, 444, footnote). Gumilla has recorded how it unquestionably appeared to him that the Carib transported themselves from the Windward Isles to the mainland of Paria, Santa Marta, Cabo de Vela, Golfe Triste, Berbis [Berbice], Corentin, Surinama, to the coast of Cayana [Cayenne], and to the Rio Orinoco. All know, he continues, that the Windward Isles were called Caribales (Diario del Almirante Colon) because the Carib formed a large portion of their population (G, II, 322-323). At the present time the Carib do not appear to occupy any distinct territory, but are to be met scattered among the other tribes throughout the Guianas. In Schomburgk's day Carib were to be found in the lower reaches of the Mazaruni, Cuyuni, and Pomeroon, but only scattered and detached on the Corentyn, Rupununi, and Guidaru (SR, II, 427).
- CARICA PAPAYA, papaw, 246.
- CARICURI, CARUCURU, names for gold, 85.
- CARIJONA, on headwaters of the Caqueta, Yapura River, a branch of the Amazon (Cr, 358). Carib stock.
- CARIPE, CARAIPE, KWEEPI, COUÉPI, ashes from its bark are used in pottery, 90.
- CARIVAUERU. *See* Bignonia.
- CARLUDOVICA, "rope," 72; for basketry, 100, 102; in the manufacture of whips, 845; for belts, 544.
- CARRION CROW, Catharista, tamed, 724; feathers for arrows, 132.
- CARRION-CROW GOVERNOR. *See* Vulture.
- CARTABAK, (?) Tetragonopterus, bait for, 188.
- CARTOWERI KNAPSACK, 450.
- CARUNA, vegetable poison, 735; seeds for bells, 574.
- CARURU SALT, 250.
- CARYOCAR. *See* Sawari.
- CASCA PRECIOSA. *See* Amapaima.
- CASHACA, rum.
- CASHEW, cultivated, 246; drink, 267; poison, 735.
- CASIMI, of the Makusi, species of Eugenia, fruit eaten, 247.
- CASSADA. *See* Cassava.
- CASSANDRA, edible beetle, 224.
- CASSARIP, extracted juice of cassava, after boiling, 236.
- CASSAVA, bread, etc., 236; starch, 234; substitutes for, 238; leaves eaten, 237; means of suicide, 732; at salutation ceremony, 811; grater, 334-343, 826; canoe, 344; squeezer, 345-355; sifter, 356-360; smoother, 365; leaf-strand figure, 621.
- CASSIRI, drink, 258.
- CASTRATION, of dogs, 719; of prisoners, 507, 769.
- CAT'S CRADLE, string figures, etc., chap. XXIV.
- CATARRO, 918.
- CATARI, CATOURI, CATOLI, knapsack, 450.
- CATCHER TOY, 617.
- CATERPILLAR, as food, 223; string figure, 672.
- CATHARISTA. *See* Carrion crow.
- CATINGA, term for an open forest.
- CAUCHERO, rubber bleeder.
- CAUCHO, Otomac name for rubber, 23.
- CAVERRE. *See* Caberre.
- CAVIA, CAVY, tamed, 723.
- CAVITA, a name for gold.
- CAXIRI. *See* Cassiri.
- CAXOEIRA. *See* Cachoeira.
- CAYMAN. *See* Alligator.
- CAYSUMA, a fermented drink from various fruits, 286.
- CAYZU, maize bread in the manufacture of maize drink, 264.
- CAZABE. *See* Cassava.
- CECROPIA, trumpet wood, for dance sticks, 578; C. peltata, leaves for "sandpaper," 21; C. palmata, Candelabrum tree, 287.
- CEDAR, BROWN, timber for boats, 794.
- CEDAR, WHITE. *See* Tabebuia.
- CEDELA ODORATA. *See* Brown cedar.

- CELT, 6; type of pattern, 7; fixation in handle, 8; manufacture, 9; engraved celts, 11.
- CEMENT. *See* Gums.
- CENTIPEDE, basketry design, 445.
- CEPHAELIS IPECACUANHA, emetic, 920.
- CEPHALOPTERUS ORNATUS, umbrella bird, 566.
- CERCOLABES. *See* Porcupine.
- CEREHU, CEREWU, seeds for "bells," 574.
- CEREMONIAL OF DRINKING, 278.
- CEREMONIES, MASTER OF, 278.
- CEREUS SP., eaten, 247.
- CHAIMA. *See* Chayma.
- CHAIN-TWIST, pattern of weaving, 112.
- CHAIR, baby's hanging-, 913.
- CHALK. *See* Earth eating.
- CHANGE OF RESIDENCE, 292.
- CHARADES, 611.
- CHARMS, in necklaces, etc., 532, 535.
- CHASTISEMENT, 914.
- CHASTITY, 733.
- CHAYMA (HIB, map) CHAIMA, in ancient Province of Cumana [west of the Orinoco] (BRI, 257). Hülhouse speaks of the Chayma, a tribe of Akawai, inhabiting the Wayena [Waini] and Barama Rivers (HIB, 331). Carib stock.
- CHECKER BASKERY PATTERN, 106, 430.
- CHEEK, deformation, 504.
- CHELICHTHYS PSITTACUS. *See* Wurwurima.
- CHEST ORNAMENTS, 537.
- CHIACOAR, maize drink, 264.
- CHICHA, beer, 256.
- CHIEF, CHIEFTAINSHIP, chap. xxvii.
- CHIGOE, JIGGER, 512, 934.
- CHILDHOOD, chap. xxxv.
- CHILDREN'S GAMES, 609-622; property, 736, 915.
- CHIMU, OR SEJE, palm from which salt is obtained, 250.
- CHINCHORRO (?=sensorio), hammock, 459.
- CHIPARARI, lanceolate composite-head arrow, 137.
- CHIQUE-CHIQUE. *See* Leopoldina.
- CHIRICOA (G, I, 252)? Wander between the Meta and Ariari Rivers. Guahibo stock.
- CHISEL, STONE, 12.
- "CHOPPING" FISH, 190.
- CHO-WA, a kind of kokerit used in basketry, 430.
- CHRYSOTHRIX. *See* Sakawinki.
- CHUKA-TUKA (Ara., children), extra warps in certain baskets, 412.
- CHUPADOR, professional sucker, 925.
- CICHLA OCELLARIS. *See* Lukunanni.
- CIGAR, CIGARETTE, 283.
- CINNAMOMUM, cultivated, 246.
- CIRCULAR-BASE BASKETS, 416-421.
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- CITRUS, cultivated, 246.
- CLASSIFICATION, arrows, 134; baskets, 448; celts, 7; hammocks, 479; houses, 298; mats, 394; trays, 402.
- CLAW-PATTERN, arrow-feathering, 132; basketry, 445.
- CLAY, eating, 253; cooking cylinders supporting the hearth, 364; baking oven, griddle, or hearth, 362, 364; modeling, 612; musical instruments, resounding vessels, 557; flute, 562; trumpet, 556; whistle, 568; pigment, red, 28; pottery, 89; mixed with certain ingredients, 90; pots and vessels, 389-391.
- CLIBADIUM SP., fish poison, 211.
- CLOAK. *See* Mantle.
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- CLOUDS, string figure, 659, 686; leaf-strand figure, 621.
- CLUB, dancing, 593; fighting, 149-154.
- COATA. *See* Ateles.
- COCK-OF-THE-ROCK, Rupicola, hunted, 183; tamed, 724.
- COCONUT, oil, 25, 515; cultivated, 247.
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- COIS, COUIS, calabash drinking cup, 384.
- COLOCASIA. *See* Tannier.
- COLORATION, of feathers artificially, 84; of hammocks, 478.
- COMB, 517.
- COMMANDER IN CHIEF, 760.
- COMMISSARIAT, 761.
- CONAMI. *See* Clibadium.
- CONDUCT, rules of, chap. xxvi.
- CONE-BASE BASKETS, 423, 424.
- CONE SHELL ORNAMENT FOR LIP, 74.
- CONSANGUINITY, 876.
- CONSTELLATIONS DEFINING THE SEASONS, 937.
- CONURUS GUIANENSIS. *See* Maracana.
- COOSHIE. *See* Kushi.
- COPAIBA. *See* Copaifera officinalis.
- COPAIFERA OFFICINALIS, oil, balsam, 23; for body anointing, 511.
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- JARURI, YARURA (= ? Sarura), a stock which had their home on or near the Orinoco between the Rivers Meta and Capanaparo (BRI, 271); about 1,000 of them are still to be met on the Capanaparo and Cinaruco (KGG, 470).
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- OYAMPI, OYANPI (PBA), OYAMBI, etc., on the upper Yary and upper Oyapock Rivers. Calayoua are only Oyampi who have had some relations with the Brazilians (Cr, 229). Carib stock.
- OYANA, AJANA, OUYANA, UAJANA (GO, 27). Upurui (GOE, 33), Oepoeroei (GOE, 113) of Surinam and Cayenne. Oyana in Cayenne are known as Roucouyenne [Orokoyana, etc.], owing to [the use of ruku] their characteristic red paint (Cr, 234). The Trio of Surinam call them Ojana or Alukujana (GO, 27). They are said to have given rise to the name Guiana. Carib stock.
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- PALISADE, 291.
- PALM, edible, 247; string figures, 646-648, 690, 694.
- PALMA CHRISTI, oil of. *See* *Copaifera*.
- PALO DE ACEITE. *See* *Copaifera*.
- PAMICARI, basketry "hat," 518.
- PANACHIKA, Mak, barbed composite arrow, 139.
- PANELA, nonrefined sugar made up into cakes in the shape of a brick, 264.
- PANPIPES, 566.
- PAO, between Apure and Cinaruco Rivers (G, I, 158).
- PAPAW CULTIVATED, 246.
- PARADISE NUT. *See* *Lecythis*.
- PARAKARI DRINK, 261.
- PARAMONA. *See* Patamona.
- PARAPI, Carib dish, 389.
- PARAU, Makusi name for arrow, 128.
- PARAVILHANA, of the Rio Branco, only a few remaining in Schomburgk's day (SR, I, 315). The Paravilhana and several sister tribes of the Wapishana have wandered, the former to the Amazons, the latter farther east (ScE, 187). Carib stock.
- PARENTS, respect for, 911.
- PARICA. *See* *Piptadenia*.
- PARIKUTA, PARICOUTE (Cr), on the upper watershed of the Mapura, a branch of the Trombetas (JO).
- PARIO SEEDS, substitute for cassava, 242.
- PARIPI, peach palm, Guilielma, 116, 117; drink, 271.
- PARISHARA DANCES, 586-590.
- PARROT, tamed, 724, 716; string figure, 703.
- PASSALUS, edible beetle, 224.
- PASSE, male tattooed, 509.
- PAT. *See* Patamona.
- PATAMONA, PATOMANA (FEL), PARAMONA, PARTAMONA, a branch of the Akawai. Dance mentioned them as among the tribes met with from the Cumapuru Rapids to beyond the Great Falls of the Demerara (Da, 216). At the present time they run between the upper Potaro and the upper Ireng. Carib stock.
- PATAOUTA, tripod for slinging hammock, 482.
- PATAUA OIL, 25.
- PATHWAY, obstructed, 291.
- PATOIS FISH, string figure, 705.
- PATTERNS, designs, etc., basketry, 444; weaving, 105-114; pottery, 94. *See also* on flutes and musical instruments.
- PAUXIANA, using ruffs, tippets, 538; employ weak curare to stupefy the toucan and rob him of his feathers, 122.
- PAULLINIA, 247; for tying rafts, 802; for fish poison, 208.
- P. SORBILIS. *See* Cupana.
- PAUWAI, knapsack, 450; leaf basket, 453.
- PAXIUBA PALM. *See* *Iriartea*.
- PAYARA. *See* Morocot.
- PAYE. *See* Piai.
- PEACE, ratification of, 777.
- PEACH PALM. *See* Paripi.
- PEAR, avocado, 246.
- PECCARY, kairuni, abuya. *See* Bush-hog.
- PEGALL, Creole term for a cover basket, 430, 433, 441-446.
- PEGE BUEY. *See* Manati.
- PEÏTO, male unit, warrior, etc., 740.
- PEKEA. *See* Sawari.
- PELUCA. *See* Puke.
- PENELOPE. *See* Marudi.
- PENTACLETHRA, timber for fire stick, 1.
- PENTAGONAL MESH, weaving, 110.
- PEPPER, drinking at captaincy ordeal, 745. *See* *Capsicum*.
- PEPPER POT, 163.
- PERAMAN. *See* Moronoba.
- PERCUSSION MUSICAL INSTRUMENTS, 573-581.
- PERFORATION, tongue, 853, 924; lips, 503; cheeks, 504; nasal septum, 505; prepuce, 507.
- PERIWINKLE, basketry design, 445; eaten, 221.
- PERIZOMA, loin cloth, 548.
- PERRO, adapted from Spanish for dog, 717.
- PERSA GRATISSIMA. *See* Avocado pear.
- PERSONAL NAMES, 881.
- PERUKE FEATHER CROWN, 518.

- PESTLE AND MORTAR, 380-382.
- PHANOEUS BEETLE, harbinger of rainy season, 938.
- PHYLLANTHUS spp., fish poison, 213; protection against kushi ants, 228.
- PIAI, medicine man, 864, 865; novitiate, 862; status with chief compared, 743; digging his own grave, 728.
- PIANOGHOTTO (SR. II, 478), PIANNOCOTAU (St. I, 405), PIANOGOTO (BRI, 257). On Schomburgk's map they are represented at the sources of the Corentyn. Brinton speaks of them as on the Rio Branco. Carib stock.
- PIAPOCO, as they call themselves, signifying a toucan, and Mitoua as they are called by their neighbors (Cr, 508). Near mouth of the Guaviar River. Arawak stock.
- PIAROA (Cr, 539). These survive, but the tribe so called speak a tongue wholly unlike the Saliva, and unconnected apparently with any other stock (BRI, 266). Saliva stock.
- PICHI (Mak. foot), arrowhead, 128.
- PICK-ME-UPS, 281.
- PIGMENT, black, 30; red, 28, 29; white, 32; yellow, 31.
- PIGTAIL HAIRDRESS FOR MEN, 515.
- PILE DWELLINGS, 314-317.
- PIMPLER PALM, pimple or thorn, and so applied to sp. of *Bactris*, *Astrocaryum*, etc.
- PINEAPPLE, 246; drink, 266.
- PINEAU, PINOT, a source of salt, 250.
- PIPTADENTIA, YOPO, YUPA, etc., narcotic, 286.
- PIRAI, PYGOCENTRUS, voracity thwarted, 195; tooth for sharpening darts, 120; cutting hair, 14; as a scraper, 18.
- PIRIO, PIRIOU. See Apouroui.
- PIROGUE. See Canoa.
- PISASSA, sandals, 553.
- PITA, PITE, PERO, silk grass. See Kuraua.
- PIUM, minute flies biting and stinging throughout the day.
- PLAITING, strand, 42, 43, 544; loop, 45, 46.
- PLAITWORK AND BASKETRY, chap. ix.
- PLANT FOOD, ETC., chap. xii.
- PLANTS, economic, 246.
- PLANTAIN, 246; drink, 268; skin for tattoo, 510.
- PLATE, COPPER. See Caracoli.
- PLEIADES, "Seven Stars," fixing the year, 936; string figure, 650.
- PLOTUS. See Ducklar.
- PLY, single, 33; two, 35; three, 36; multiple, 37.
- POCHI-PANAIYANG, "night-owl ear," leaf basket, 453.
- POISON, bamboo for alligator, 217; darts, 121-123; fish, 208-214; antidotes, 930; secret, 734, 735.
- POITI, POITO, slave, 740.
- POLE, PADDLE, 799.
- POLICOUR. See Palicour.
- POLUYO, source of salt, 250.
- POLYGAMY, 892-896.
- POLYPODIUM, source of salt, 250.
- POND-FLY, the Creole term for a dragon fly.
- PONERA CLAVATA. See Counterirritants.
- PONO DANCE, 840, 865.
- PORCUPINE, Cercolabes, tamed, 723; spines for necklaces, 534.
- POROKOTO. See Purigoto.
- PORPHYRY STONE CHIPS, for graters, 338.
- PORTAGE, artificial roadway along or behind the river bank over which the emptied boat can be dragged so as to avoid falls, rapids, etc., 801.
- POSSIRU, the old-time five-pronged arrow from Cayenne, 141.
- POT STANDS, 392.
- POTALIA AMARA, antidote for cassava poison, 930.
- POTATO, 246.
- POTHOS MACROPHYLLA, for basketry, 100.
- POTTERY, debris used as sandpaper, 21; figured, 96, 97; pots, pans, vessels, 389-391; smashed at death, 865; choice of clay, 89, 90; manufacture, 91; firing, 92; luster and glaze, 93; painting and patterns, 94; share played by women, 899; articles of trade, 828.
- POTU. See Aputu.
- POUGOULY, arrow poison, 123.
- POWIS, Crax sp., how hunted, 159, 180; when to be hunted, 937; tamed, 724; feathers for arrows, 132; feathers for ruffs, mantles, 538.
- PRAYA, a sandy beach.
- PRESENTS, the giving and taking of, 818.
- PRESERVATION AND COOKING OF ANIMAL FOOD, 163.
- PRESSER. See Temporary separator.
- PRIONUS. See Sawyer beetle.
- PRISONERS, 767-776.
- PRIVILEGES, HEREDITARY, 754.
- PROCYON CANCRIVORUS. See Raccoon.
- PROPERTY, of children, 915; deceased persons, 834; marks on, 737; accumulation of, 816.
- PROTECTION OF POTTERY, 95.
- PROTIUM ARACOUCHILI, 23. See Arrecocerra. P. guianense, heptophyllum, carana, 23, 512. P. sp., timber for corials and canoes, 794.
- PSEUDALOPEX. See Canis azarae.
- PSIDIUM, 247.
- PSOPHIA SP. See Warracabba.
- PTEROCARPUS GUIANENSIS. See Arisauru.
- PUBERTY ORDEALS, 884, 885; teeth filed, extracted, etc., 502; tattoo, 510.
- PUCHERUM. See Kai-appa.
- PUDDLING FOR FISH, 207.
- PULEX PENETRANS. See Chigoe.
- PULKE, the ite drink of the Orinoco Indians, 269.
- PUMPKIN, cultivated 244.
- PUMPHOOD BARK, for house walls, 302.
- PUNISHMENT, chap. xxvi.

PUNKIN, vegetable poison, 735.
 PUPAL-YAPONG, head stick for hammock weaving, 465.
 PUPUNHA. *See* Guilielma.
 PURAWATKA BASKET, 415.
 PURCHASE, WIFE BY, 871.
 PURGATIVES, 920.
 PURIFICATION. *See* Ordeals.
 PURIGOTO, IPURICOTO (BRI, 257), PURUKOTO (KGG), POROKOTO. On the Uraricapara River, a branch of the upper Parima (ScF, 214). Said to be extinct here now as a tribe (KGG, 449). Carib stock.
 PURPLEHEART, *Copaifera pubiflora*, timber for corials, etc., 794; bark for woodskins, 798; timber for clubs, 149; bows, 125; for stone-chip graters, 335.
 PURSE-NET HAMMOCK, 477.
 PURUKAI. *See* *Copaifera*.
 PURUKOTO. *See* Purigoto.
 PURUKURI, savanna plover, whistles, 567, 844.
 PURUPURU, a skin disease fairly common in certain areas.
 PUTUBANG, paddle-shaped dancing club, 593.
 PUYA, Makusi harpoon arrow, 143.
 PUZZLES, string, etc., chap. xxiv.
 PYGOCENTRUS. *See* Pirai.
 QUADRILATERAL MESH FOR WEAVING, crossed, 111, 429.
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 QUAKE, a Creole term for certain openwork baskets, 425.
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 QUQUA, GUAGE, speak a dialect of the Arawak (BRI, 266). Saliva stock.
 QUARENTENA, spree, etc., 286.
 QUARRY, for grater stone chips, 338.
 QUARTA. *See* Panpipes.
 QUARTZ, chest ornament, 20, 537; beads, 76.
 QUASSIA AMARA, febrifuge, 927.
 QUATTA. *See* Ateles.
 QUEBITIA GUIANENSIS, for snake bite, 929.
 QUERRIMAN FISH, *Mugil brasiliensis*.
 QUEYU. *See* KUYU.
 QUIRIPA, snail-shell beads, 540.
 QUIRQUIRIPA (G, I, 158). According to Gumilla's map, they were on the upper Caura. Carib stock.
 QUIRRUBA (G, II, 209).
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 RAIN FROG, *Hyla venulosa*, harbinger of rain, 938.
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 REGATAO, a huckster dealing chiefly in rubber.
 REGULO. *See* Cacique.
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 REPTILES, in captivity, 725.
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 SABUCAYA. *See* *Lecythis*.
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 SAICHIKO. *See* Atorai.
 SAILS, 797.
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 SALAPENTA, Creole term for lizards, etc.
 SALICORNIA, A source of salt, 250.
 SALIES. *See* Guacharo.
 SALI-SALI. *See* *Lonchocarpus rufescens*.

- SALIVA, SALIBA, lived principally on River Cinaruco below the Meta; none of that name at present on the Orinoco (BRI, 266), but some 200 are said to be living westward of Orocué on the Meta River (KGG, 470).
- SALT, 250-252, 284; for fits, 928; as poison antidote, 716, 930.
- SALTO, waterfall.
- SALUMA. *See* Taruma.
- SALUTATIONS, chap. xxxi.
- SALZA, sandals, 553.
- SAMAKO, Carib water jar, 389.
- SAMBURA, SAMUR, drum, 579.
- SAMEE OR SAMEC HAMMOCK, 459.
- SAND BURIAL, protection against mosquitoes, 933.
- SANDALS, 553.
- SANDPAPER. *See* Curatella.
- SANTITATION, 935.
- SAPARA. *See* Zapara.
- SAPERA, Carib bowl, 389.
- SAPIUM, 23.
- SAPODILLA, 247.
- SAPUCAYA. *See* Kakaralli.
- SARAPA, barbed composite arrow, 141.
- SARARACCA, harpoon-arrow, 143.
- SARAU, ite twine, 58, 59; hammock, 463, 464.
- SARBACAN. *See* Blowgun.
- SARPAT, sandals, 553.
- SARURA (G, I, 251), at Santa Barbara on the River Cinaruco. Perhaps these are identical with Jaruri, Yarura.
- SATCHEL, basket, 442; mat, 399.
- SAUCES, 248, 249.
- SAVANNA DOG. *See* Maikang.
- SAVANNA GRASS. *See* Blade grass.
- SAW, iron, 22.
- SAWARI, 247; substitute for cassava, 243; sawari-seed shaped houses, 304.
- SAWATO, Makusi harpoon arrow, 142.
- SAWFISH PATTERN FAN, 367-371.
- SAWYER BEETLE, harbinger of rain, 938.
- SCAFFOLD, for drying kokerit leaves, 322.
- SCALE LINES, 38, 480.
- SCALPING, 767.
- SCARIFICATION, 923.
- SCENT, fish attracted by, 188.
- SCEPTER, symbol of authority, 751.
- SCHIRIANA. *See* Guaharibo.
- SCHWARTZIA TOMENTOSA, for clubs, 150; bows, 125.
- SCOPARIA DULCIS, febrifuge, 927.
- SCORPION BASKETRY DESIGN, 445.
- SCRAPER, stone, 16; shell, 17; tooth, 18.
- SCRUB TURKEY. *See* Maam.
- SEA COW. *See* Manati.
- SEA WATER, a source of salt, 251; not bathed in, 932.
- SEASONS, how recognized, 937, 938.
- SEED, apron, 549; bait, 188, 192; bead, 75; box, 385; necklace, 535.
- SEJE. *See* Chimu.
- SEKKE-SEKKE FIDDLE, 572.
- SENSE OF LOCALITY, 784.
- SEN-SEN BEE AND EXCRETA, 721.
- SENSORO, ite twine, 60; hammock, 477, 459.
- SEPARATOR, permanent, 468; temporary, 470.
- SERADA. *See* Inga.
- SEREKONG, SARRAKONG (ScO, 385), SERIKUNA (EU). Live at the sources of the upper Mazaruni (SR, II, 237, 253), on the upper Cotinga, etc. Carib stock.
- SERINGAL, a rubber forest.
- SERJANIA, fish poison, 208. *See* Cupana.
- SEROR-E, reed instrument, 570.
- SERPO, pike, symbol of authority, 751; an old-time Palicour spear, 147.
- SERVICE, DOMESTIC, 902.
- SETTLEMENT, notice of approach to, 803.
- SEXUAL; freedom, 733; mutilation, 507; marriage, polygamy, etc., chap. xxxiv; public procession of men who have had connection with the deceased, 849.
- SHAFT, ARROW, 130.
- SHAKÓKOLI, obscene Arawak dance, 595.
- SHAK-SHAK. *See* Gourd rattle.
- SHEEP BASKETRY PATTERN, 444.
- SHELL, bead, 74; chest ornament, 537; scraper, 17; blown by visitors approaching, 803; and in war time, 758. *See* Mollusk.
- SHELTER, house, 293-295; against rain, 296; for purposes of hiding in course of hunting, 159.
- SHIELD, 116; game, 608.
- SHIMARA, Arawak name for arrow, 128.
- SHIMARA ADIKUDA-KUANNA, arrow tightener, 130.
- SHIMARARO, Arawak name for bow, 125.
- SHIPARARI. *See* Chiparari.
- SHI-PI, landing-net basket, 423.
- SHIPU. *See* Hymenaea.
- SHIRABALLI. *See* Bixa.
- SHIRADA. *See* Inga.
- SHIRT, bark, 539.
- SHOOTING, with arrow, 146.
- "SHOUTING" AND ADVERTISING, 822.
- SHOVEL. *See* Spade.
- SIBU. *See* Hymenaea.
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- SIFTER, CASSAVA, 356-360; ite, 408.
- SIGHT, fish attracted by, 189.
- SIGNALING. *See* Music, 555.
- SIGNS AND SIGNALS ON THE ROAD, 778.
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- SILURUS. *See* Bagre, Laulão.
- SILVER, 86; chest ornaments, 537; ear, 506, and nose ornaments, 505.
- SILVERBALLY. *See* Siruaballi.
- SIMIRI. *See* Hymenaea courbaril.
- SINAPOT, fish poison, 209.
- SINGLE-PLY COTTON TWINE, 33.
- SINTAKAI-AN, leaf basket, 453.
- SIPO, SIPP, bush rope, 72.
- SIRUABALLI, brown and yellow, for corials, 794.
- SITIO, a small settlement of white or half-civilized Indians.
- SITUATION OF HOUSES, conditions affecting, 290.

- SIRSI, on the Aiary River (KG, II, 322).
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- SKELARIBNI, long, flat spool, 471.
- SKELETON, disposal, etc., of, 832, 838, 849.
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- SKIRTS, 551.
- SKLIRIBIÉ, Wap. arrow tightener, 130.
- SKOTELIBI, permanent separator for ham-
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- SKULLS, manufactured into whistles, 569.
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- SMOKE, a protection against mosquitoes,
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- SMOOTHER, CASSAVA, 365.
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- SNAKE, 219; string figure, 644; basketry
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- SNAKE BITE, treatment of, 929.
- SNAKE FISH. *See* Luku-luku.
- SNAKE "HAIR," a poison, 734.
- SNAKEWOOD. *See* Brosimum.
- SNARE. *See* Trap.
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- SPEECH, welcome, 813; may be specially
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- SPITTING, on corpse, 864; at anything
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- SPOOL, knobbed, 466; flattened, 471.
- SPOON, stirring paddle, 378.
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- STACHYTARPHETA, for diarrhea, 927.
- STAGING, from which to watch acouri, 164;
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- STAND, for pot, 392.
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- STARS, defining the seasons, 937.
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- STRANGER'S HOUSE, 804.
- STRAPS FOR KNAPSACK, 61, 62.
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- STRYCHNOS SP., for arrow poison, 121; S.
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- SUBBIZU, moldy maize-bread loaves, for the
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- SUCKLING, to advanced age, 909; of ani-
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- SUCTION, in disease, 925.
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- SUGAR CANE, cultivated, 246; drink, 267;
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- SUICIDE, 732.
- SUMARA, Wapishana name for a bow, 125.
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- SUN, string figure, 659.
- SUNBIRD, tamed, 724.
- SUNFISH, string figure, 700.
- SURA, high (one-story) house of Cayenne,
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- SURIANA, knapsack, 450.
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- SWEETHEART, game to find, 621.
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- TARAI, arrowhead, 128; wooden bench, 328.
- TABARA-HUIH, drink, 271.
- TABEUBIA LONGIPES, white cedar, gum, 23.
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- TABONG-MARIA, back or lower surface of Arawak fan, 367.
- TABOO, property, 737; food, 276; in disease, 919; in travel, 802 A; in mourning, 831, 859; grave, 832; names, 802 A, 881; women, 857.
- TABOUI, large meeting house of Cayenne, 312.
- TABULU, drum, 579.
- TABUSEBA, *See* Genipa.
- TACACA, a preparation of cassava, 248.
- TAIKE, block-shaped dancing club, 593.
- TAIROU, necklace of *Omphalea* seeds, 535.
- TAIYARRIBI, the beater in hammock making, 469.
- TAJAKO-MARIO, front or upper surface of Arawak fan, 367.
- TAJANYATO, *See* Warrau.
- TAJIKE, Ara. "ear," the handle of a fan, 367.
- TALISMAN, *See* Charms.
- TAMANAC, on the Cuchivero and lower Orinoco. Extinct now (BRI, 264). Carib stock.
- TAMARAI, Mak. knobbed composite-head arrow, 138.
- TAMING, ETC., OF ANIMALS, 716.
- TAMIREMUI, *See* *Bignonia*.
- TAMUCHI, headman, chief, 740.
- TANARA BASKET, 415.
- TANANA, *See* Wood-cricket.
- TANGA, or bead-apron, 546.
- TANNIER, *Colocasia esculenta*.
- TAOUARI, for bark shirts, 539.
- TAPANA, drink, 257.
- TAPARA, Wap. knobbed composite-head arrow, 138.
- TAPIR, hunting, 174; hide for shields, 116; hoofs as medicine, 928; hoofs as bells, 575.
- TAPOWRIPA, TAPURIBA. *See* Genipa.
- TAR, *See* Taruma.
- TARAMAKONDI, Arawak name for lateral edge of fan, 367.
- TARAMIREUNA, horizontal portions of hammock frame, 465.
- TARATU, the wrestling-shield champion, 608.
- TARAU, jagged simple-head arrows, 135.
- TARI, timber for bows, 125.
- TARIANA, on the upper Rio Negro (KG, II, 322). Arawak stock.
- TARIMBA, monochord musical instrument, 571.
- TARUMA, SALUMA, etc., are fast disappearing like the Atorai; they lived on the upper Essequibo with its tributaries, the Cuyuwini and Yuawari (?Yuruaril). They seem to have originally come from the Rio Negro (ScE, 167, 169; SR, II, 388, 466). Call themselves Ujessi, and their present chief is a Maopidyan (JO). Arawak stock. Also in Surinam.
- TATÁBO, timber for boats, 794.
- TATTOO, on face, 509; on other portions of body, 510.
- TAU. *See* Taulipang.
- TAULIPANG (KGG, 454), TAUREPANG, JARICUNA, or JARÉCOUNE, is the name given them by the Wapishana, and through them, by the Brazilians. At Roraima, then from there south and southwest over the upper Cuquenam and the upper Majary to the lower end of the island of Maracá. They told me they were "close up" Arekuna. Carib stock.
- TAUREPANG. *See* Taulipang.
- TAURI. *See* Atorai.
- TAWA, Makusi name for a light gray clay, 591.
- TA-WAUT, Wap. harpoon arrow, 142.
- TAYA, vegetable poison extract, 735.
- TCHUPARE, sting ray, leaf plate, 453.
- TECOMA SP. *See* Hackia.
- TEETH, deformation, 502.
- TENGE, cassava squeezer, 345.
- TENNIS, with rubber ball, 603, 604.
- TENT, for boat, 795.
- TENYARI. *See* Brown cedar.
- TEPHROSIA TOXICARIA, fish poison, 212.
- TEPURI, master of ceremonies, 588.
- TERMITES, eaten, 225.
- TETRAGONOPTERUS. *See* Cartabak.
- THATCH, 318-324.
- THEFT, 736.
- THEOBROMA, cacao, 246.
- THEVERIA NERIIFOLIA, seeds for "bells," 574.
- THREAD. *See* Twine.
- THREE-PLY COTTON, twine, 35; scale lines, 38.
- TIRA BEE AND EXCRETA, 935.
- TIBID, Wap. name for mamuri, 100, 417.
- TIBIKUSHI, timber for bows, 125.
- TIGER, the almost invariable Creole term for jaguar, and other members of the cat tribe. Tiger and Turtle story, 599.
- TIGER BIRD, *Tigrisoma*, 847.
- TILÉLI, panpipes, 566.
- TILLANDSIA, miniature water tanks in the sheath bases of its leaves, 254.
- TIMBER, for bows, 125; clubs, 150.
- TIMBERWORK. *See* Woodwork.
- TIMBO, Lingua geral name for fish poison, 208.
- TIME, RECOGNITION OF, 936.
- TIMEHRI, incised rocks, 781.
- TINAMUS. *See* Maam.
- TINUKI, knobbed spool used in hammock making, 466.
- TIOUBOUTOULI, a Carib Island captain, 741.
- TIPITI, a name for the cassava squeezer, 345.
- TIPPET, FEATHER, 538; used in foot races, 591.
- TISHI (Ara. head), that portion of fan blade close to handle, 367.
- TISHI-HUDI (Ara.), upper edge of the fan, 367.
- TISHIRI, Arawak name for arrow head, 128.

- TISSA, Arawak name for nock of arrow, 133.
- TITIMI, a strong bark used for straps, etc., 411.
- TIVERIGHOTTO, on the Rio Branco (BRI, 257). Carib stock.
- TOAD. *See* Frog.
- TOBACCO, cultivated, 246; preparation, 282; for visitors, 810, 811; smoking, 283; chewing, 284; licking, 285; as emetic, 920.
- TODOLEBO, Ara. spiral weft, 412.
- TOKOWARI, Carib name for clay goblet, 389.
- TOLDA (Spanish), the vaulted awning of the larger traveling boats.
- TOLETE, hook used in catching alligator, 217.
- TOMAI-EN, Carib name for the ordinary clay buck-pot, 389.
- TO-MO, "baboon" throat leaf basket, 453.
- TONGUE, pierced in mourning, 853; for blood as therapeutic agent, 924.
- TON-KI, Makusi name for cassava squeezer, 345.
- TOOLS, PRIMITIVE, chap. i.
- TOOTH, deformation, 502; necklace, 531-533; scraper, 18; knife, etc., 15, 510, 733, 736, 748.
- TOPS, 615.
- TORCH, 5; for fishing, 189.
- TORTOISE. *See* Turtle.
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- TOUCAN, Rhamphastos sp., called, 159; stunned, 122; robbed of its feathers, 183; tamed, 724; feathers for tippet, 538; beaks for bells, 575.
- TOULÉ DANCE, 840, 865.
- TOYS, 609-621.
- TO-YURANNI, wooden float for arrow, 140.
- TRACKING ANIMALS, 784.
- TRADE AND BARTER, chap. xxii.
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- TRAP, SNARE, ETC., for alligator, 217; bush-hog, 167; bird, 177-179; rat, 172; armadillo, labba, acouri, etc., 161; fish, 194-206; represented in string figures, 653, 656, 673-675.
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- TRIANGLE SPRING HOOK, 196.
- TRIANGULAR SHELTER, 294.
- TRICKS WITH STRING, chap. xxiv.
- TRIO, DRIO, DIAU (JO), call themselves Trio, Thio, and also Kiliu; more probably the last term is a species of toucan (GO, 27). They occupy the upper third of the Tapanohoni, a branch of the Maroni, and the sources of the Parou. In 1843 Schomburgk found a Trio village established near the sources of the Corantyn, but travelers passing that way since then have not come across them (Cr, 274).
- TROOLIE. *See* Truli.
- TROPHIES OF WAR, 764.
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- TROUPIAL, tamed, 724.
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- TRUMPETWOOD. *See* Cecropia.
- TRUMPETER. *See* Warracabba.
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- TSARARAK, Wap. harpoon arrow, 143.
- TSUBIRAWA, "baboon" throat leaf baskets, 453-457.
- TUB BASKET, 438.
- TUBE. *See* Trumpet.
- TUCHAO. *See* Tamuchi.
- TUCUM, *Astrocaryum* sp., hammock, 461; bow string, 127.
- TUKANO, on the upper Rio Negro (KG, II, 322). Betoya stock.
- TUKUI, Makusi name for humming bird, 587.
- TUKUPI SAUCE, 248.
- TUKUTCHI (Wap. claw), fish arrow, 132, 139.
- TUNEBO, in the cordilleras adjacent to the Betoi (BRI, 273); about 100 of them are left now (KGG, 470). Betoya stock.
- TURALLA, Carib charm or talisman, 822.
- TURARA. *See* Mimusops.
- TURÉ, reed instrument, 570.
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- TURTLE-EGG OIL, 26; for body anointing, 511.
- TURU, *Oenocarpus* sp., fruit, 247; drink, 270; oil, 25; spinous processes for darts, 120; leaves for baskets, 456, and for thatch, 321, 324.
- TURURI BARK, for bowstring, 127; "shirts," 539; laps, 547.
- TUSHAU. *See* Tamuchi.
- TCYUKA, on the upper Rio Negro (KG, II, 322). Betoya stock.
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- TWIN DESTROYED, 729.
- TWINE, CORDS, BANDS, cotton, chap. III; other than cotton, chap. IV.
- TWINED BASKETRY PATTERN, 112.
- TWO-PLY COTTON TWINE, 35.
- UACARRA, on the Rio Apaporis, 885. Arawak stock.
- UACU, seeds constitute a source of oil, 25.

- UAJANA. *See* Oyana.
- UANANA, a tribe of Betoja stock on the Uaupes, 359.
- UILL, Carib Island name for the commander in battle, 760.
- UITOTO. *See* Maku.
- UMAUA. *See* Omaua.
- UMBILICAL CORD, 905.
- UMBRELLA BIRD, *Cephalopterus ornatus*, 566.
- UMIRI. *See* Humiria.
- UNGUENTS. *See* Oils, Anointing.
- URABA, Makusi name for a bow, 125.
- URARI. *See* Curare.
- URN BURIAL, 836.
- URUKU, URUCU, RUCU, ROUCOU. *See* Bixa.
- URARIA FEBRIFUGA, for fever, 927.
- VACHACOS, ants made into a paste, 225.
- VALUES, 817.
- VANDELIA, an emetic, 920.
- VANIVA. *See* Baniva.
- VAPOR BATH, 922.
- VARA (Spanish), approximately a yard measure.
- VAT. *See* Trough.
- VACLTED HOUSE, 299; scaffold for drying leaves, 322.
- VENTAN. *See* Benta.
- VESERRI, VESIRRI, oil, 25; palm fruit, 247.
- VICISS, sleeping dysentery, 927.
- VICISSI, VICISSI, duck, 724.
- VIOL, VIOLIN, 572.
- VISITOR, string figure, 654. *See* Salutations.
- VISMIA GUIANENSIS, gum, 23.
- VITIS SP., a source of water supply, 254.
- VOCHISIA TETRAPHYLLA. *See* Iteballii.
- VULTURE, carrion crow governor, 601.
- WAI. *See* Waiwai.
- WAIKA. *See* Akawai.
- WAIKARAPA BASKET, 413, 414.
- WAIWAI, WOYAWAI, OUAYEOUE (Cou.), etc. At distant sources of the Essequibo (Br. 339), . . . ramifies to the lower streams of the Amazon (SR, II, 389). Coudreau, apparently owing to their comparatively lighter color (ScE, 171), derives their name from the white ones, from Ouayoué, tapioca (Cou, II, 378). Carib stock.
- WAIYAMARA, WOYAMARA, WAYAMARA, WAYUMARA. Their principal settlements are along the River Mocajahi . . . the tribe is not numerous. They only spoke of three other settlements besides their own (ScF, 220). Said to be extinct now as a tribe (KGG, 448). Carib stock.
- WAIYARI, knapsack, 450.
- WAKARAD, a generic term for baskets, 413, 414.
- WAKAWAI. *See* Akawai.
- WALISIII, knapsack, 450.
- WALLABA, Eperua spp., gum, 23; plaster for wounds, 929; emetic, 920; juice of bark for hammock staining, 478.
- WAMARA. *See* Schwartzia.
- WAMPANG, the first one in the foot races, 591.
- WANNISEMO-I, bamboo flute, 561.
- WANSIMAL, a decoction of the roots for eye complaints, 927.
- WAP. *See* Wapishana.
- WAPIANA. *See* Wapishana.
- WAPISHANA, WARPESHANA, MAPESHANA (ScG, 243), MAPISIANA (ScO, 79), OUA-PI-SIANA, OUA-PICHANE. Call themselves Wapishan, but are called Wapiana by the Makusi. On the savannas between the Guidaru, Rupununi, Cotinga Rivers and the Pakaraima Mountains. They used to occupy the Takutu (SR, II, 289). Arawak stock.
- WAPISIANA. *See* Wapishana.
- WAR AND WARFARE, chap. xxviii.
- WAR. *See* Warrau.
- WARAPAIMA, Sudis gigas, with hook, 191; tongue used as sandpaper, 21.
- WARARA-RAUCUI TIPPET, 538.
- WARIMBA, WARIMBO. *See* Ischnosiphon.
- WARRACABBA, trumpeter bird, *Psophia* sp., tamed, 724.
- WARRACABBA "TIGER," 718.
- WARRAP, sugar-cane drink, 267.
- WARRAU, WARRAW (BE, 34), WARAU (Br, 58), WORROW (St, I, 44), WAROW (HiB, 333), GUARAU or GUARAUNA (G, I, 144), UAROW, OARAW-IT (AVH, III, 27), ? ARAOTE (GB, 57). From the Orinoco delta along the coast lands into Surinam. On the Pomeroon, the Warrau say they are so called from Wa(hibarka)arau i. e., corial—belonging to. Here they call themselves Tajanyato, i. e., speech, language, a term which the Arawak occasionally use for them.
- WARRI-WARRI. Arawak name for fan, 366.
- WARRUNGA, dance stick, 576.
- WASHIBA, timber for bows, 125; clubs, 149.
- WASPS AND BEES AS FOOD, 226.
- WASP-STINGING ORDEAL, 884.
- WASSI, the Carib name for manicol; poison, 735.
- WATCH POST. *See* Hiding shelter.
- WATER, for drinking, 254; lashed for fish, 193.
- WATER BEETLE, basketry design, 445.
- WATER DOG. *See* Otter.
- WATER GAMES, 622.
- WATER HAAS, *Hydrochaerus capybara*, hunted, 175; hoofs as bells, 575.
- WATER LILY, bud as fish bait, 192.
- WATERMELON, cultivated, 244.
- WATERPROOF BASKETRY, 115, 433.
- WAX, bees, 24; modeling, 612; diaphragm in flageolets, 563, 564. *See* Gums, Resins, etc.
- WAYUCO. *See* Guayuco.
- WEAPONS, hunting and fighting, chap. x.
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- WEIRA. *See* Weya.
- WEIRS AND FENCES, for trapping fish, 203.
- WELCOME AND FRIENDSHIP, 807, 808; speech of, 813.

- WEYA, WEYRA, HUYA, OULIN, OURIN, etc., *Mourera fluviatilis*, 190, 210, 250, 257, 284.
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- WICKER PATTERN BASKETRY, 107, 431.
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- WIFE, 868-874.
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- WILD CASHEW, drink, 267.
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- WILKO, a brown-red pigment, 28.
- WILLOUGHBEIA ACIDA, for diarrhoea, 927.
- WISHBONE PATTERN FAN, 368.
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- WOMAN, relation to work and labor, 899-903; chiefs, 750; dancing, 595; decoys in warfare, 764.
- WOOD ANT, females eaten, 225.
- WOOD CRICKET, "singing," 726.
- WOODPECKER, string figure, 706.
- WOOD-SKIN, boat, 798.
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- WO-PA, circular plaited tray, 409.
- WORALLI. *See* Curare.
- WORDS OF SONG, 596, 597.
- WORK AND SEX, 899-903.
- WOUNDS, treatment of, 929.
- WOYAWAI. *See* Waiwai.
- WRAPPED PATTERN BASKETRY, 113.
- WRESTLING GAMES, 607; at Parishara dance, 591; at salutation ceremony, 811.
- WURALI. *See* Curare.
- WURWURIMA, secret poison, 734.
- YACKMAN ANT, the Jagd-man or huntsman's ant that comes at regular periods and clears out all the other ants.
- YAHÉ, drink, 268.
- YAM, cultivated, 246.
- YAPOTARI, headman, 740.
- YAPURUTU, wooden flute, 559.
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- YARURA. *See* Jaruri.
- YARURU. *See* Paddle wood.
- YATAMA-IDAK, Wapishana barbed composite arrow, 139.
- YATE, musical instrument, 571.
- YAUARY, 461. *See* Awarra.
- YAWARRI. *See* Opossum rat.
- YAWS, cure for, 927.
- YEUANA. *See* Maiongkong.
- YELLOW PIGMENT, 31.
- YERBATERO, professional poisoner, 735.
- YIBUR, sting-ray, leaf plate, 453.
- YOKU, ant bite, counterirritant, 926; punishment, 739.
- YOPO. *See* Yupa.
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- YUCA, YUCCA. *See* Cassava.
- YUKUNURI FISH, caught by jaggig, 193.
- YUNANDO. *See* Raiser.
- YUPA. *See* Piptadenia.
- YURO, Arawak name for cassava squeezer, 345.
- YURU. *See* Head stick.
- YURUMA, its starch, 233.
- YURUPARI. *See* Jurupari.
- ZAPARA, SAPARA. These, it appears, have arisen from the intermarriage of Makusi and Arekuna. They principally inhabit the mountains Tupoe-eng and Waikamang, though there are likewise a few of their settlements along the banks of the Parima (ScF, 218). Said to be extinct as a tribe (KGG, 448). Carib stock.
- ZARABATANA. *See* Blowgun.
- ZINAPIPO, for talismanic necklace, 535.
- ZURUMATA, a branch stem of the Pianoghotto (SR, II, 474).



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